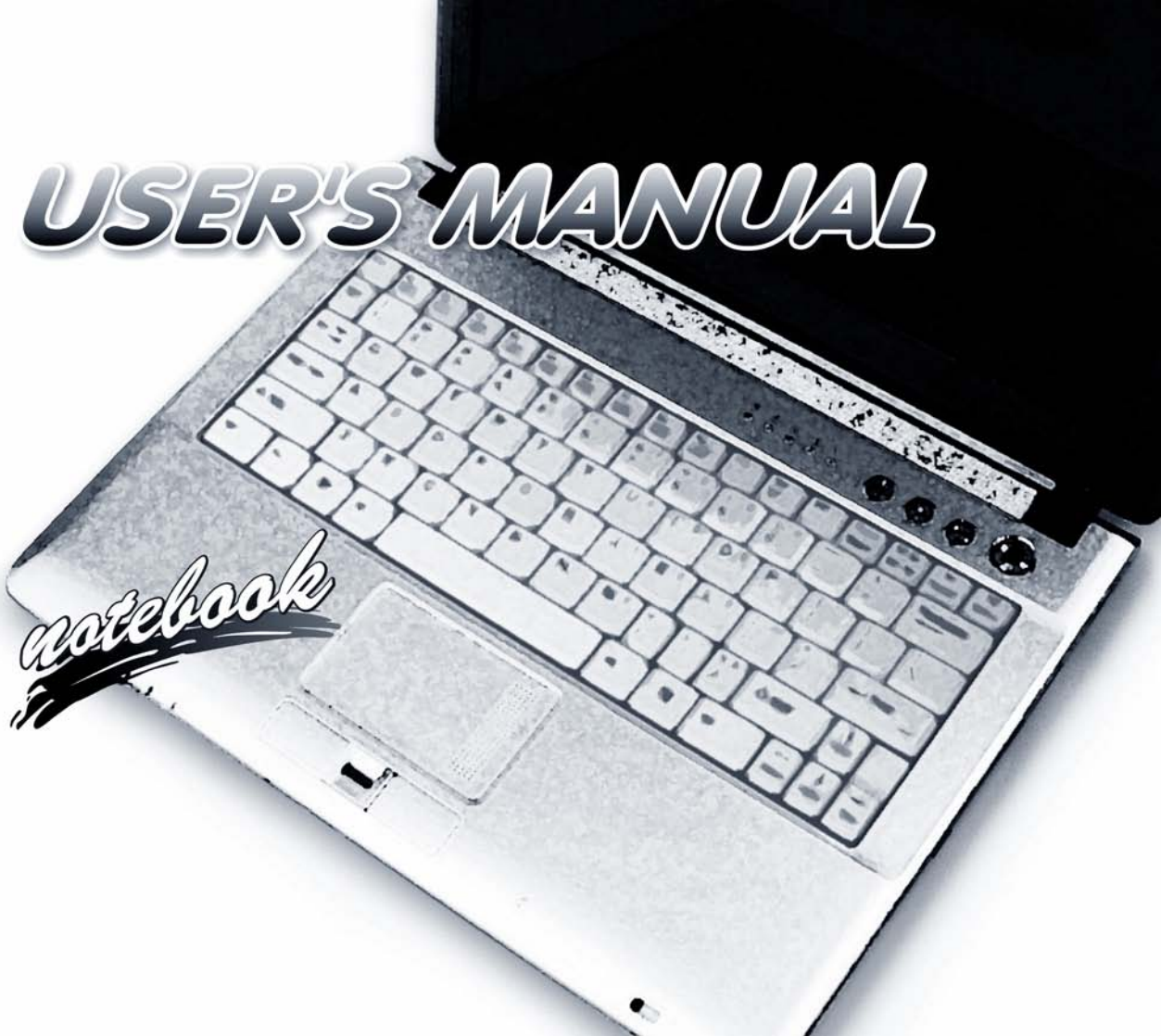
USER'S MANUAL

notebook



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FCC Statement

(Federal Communications Commission)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the service representative or an experienced radio/TV technician for help.

Warning

Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the manufacturer for compliance with the above standards could void your authority to operate the equipment.

If your purchase option includes both **Wireless LAN** and **3.5G** modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock, and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using this equipment with a telephone line (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 3.42A (**65** Watts) minimum AC/DC Adapter.

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

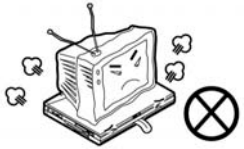
TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER, TELECOMMUNICATION LINE CORD

This Computer's Optical Device is a Laser Class 1 Product

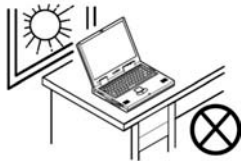
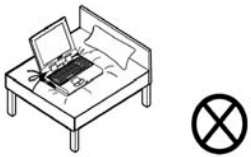
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

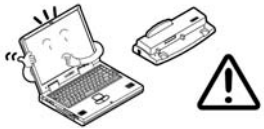
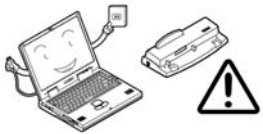
Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface that will block the Vents/Fan Intakes.*
			

3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.

4. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*

5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

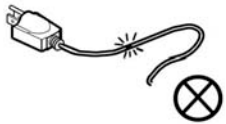
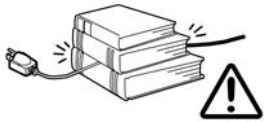
Power Safety

The computer has specific power requirements:

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

- Only use a power adapter approved for use with this computer.
- Your AC/DC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies (i.e. AC/DC adapter or car adapter).

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not remove any batteries from the computer while it is powered on.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Disposal & Caution

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Cleaning

Do not apply cleaner directly to the computer; use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Servicing

Do not attempt to service the computer yourself. Doing so may violate your warranty and expose you and the computer to electric shock. Refer all servicing to authorized service personnel. Unplug the computer from the power supply. Then refer servicing to qualified service personnel under any of the following conditions:

- When the power cord or AC/DC adapter is damaged or frayed.
- If the computer has been exposed to rain or other liquids.
- If the computer does not work normally when you follow the operating instructions.
- If the computer has been dropped or damaged (do not touch the poisonous liquid if the LCD panel breaks).
- If there is an unusual odor, heat or smoke coming from your computer.

Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before turning the computer on.

Travel Considerations

Packing

As you get ready for your trip, run through this list to make sure the system is ready to go:

1. Check that the battery pack and any spares are fully charged.
2. Power off the computer and peripherals.
3. Close the display panel and make sure it's latched.
4. Disconnect the AC/DC adapter and cables. Stow them in the carrying bag.
5. The AC/DC adapter uses voltages from 100 to 240 volts so you won't need a second voltage adapter. However, check with your travel agent to see if you need any socket adapters.
6. Put the notebook in its carrying bag and secure it with the bag's straps.
7. If you're taking any peripherals (e.g. a printer, mouse or digital camera), pack them and those devices' adapters and/or cables.
8. Anticipate customs - Some jurisdictions may have import restrictions or require proof of ownership for both hardware and software. Make sure your documents are prepared.

Power Off Before Traveling

Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the vent(s)/fan intake(s)/outlet(s) to be blocked. To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s)/outlet(s) while the computer is in use.

On the Road

In addition to the general safety and maintenance suggestions in this preface, and Chapter 8: Troubleshooting, keep these points in mind:

Hand-carry the notebook - For security, don't let it out of your sight. In some areas, computer theft is very common. Don't check it with normal luggage. Baggage handlers may not be sufficiently careful. Avoid knocking the computer against hard objects.

Beware of Electromagnetic fields - Devices such as metal detectors & X-ray machines can damage the computer, hard disk, floppy disks, and other media. They may also destroy any stored data - Pass your computer and disks around the devices. Ask security officials to hand-inspect them (you may be asked to turn it on). **Note**: Some airports also scan luggage with these devices.

Fly safely - Most airlines have regulations about the use of computers and other electronic devices in flight. These restrictions are for your safety, follow them. If you stow the notebook in an overhead compartment, make sure it's secure. Contents may shift and/or fall out when the compartment is opened.

Get power where you can - If an electrical outlet is available, use the AC/DC adapter and keep your battery(ies) charged.

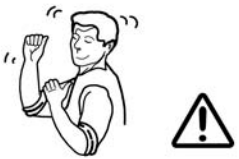
Keep it dry - If you move quickly from a cold to a warm location, water vapor can condense inside the computer. Wait a few minutes before turning it on so that any moisture can evaporate.

Developing Good Work Habits

Developing good work habits is important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following are some tips to reduce the strain:

- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90-degree angles when you are working.
- Take periodic breaks if you are using the computer for long periods of time.

Remember to:



- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.

Lighting

Proper lighting and comfortable display viewing angle can reduce eye strain and muscle fatigue in your neck and shoulders.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display-viewing angle to find the best position.

LCD Screen Care

To prevent **image persistence** on LCD monitors (caused by the continuous display of graphics on the screen for an extended period of time) take the following precautions:

- Set the *Windows* **Power Plans** to turn the screen off after a few minutes of screen idle time.
- Use a rotating, moving or blank screen saver (this prevents an image from being displayed too long).
- Rotate desktop background images every few days.
- Turn the monitor off when the system is not in use.

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Chapter 1: Quick Start Guide

Overview

This Quick Start Guide is a brief introduction to the basic features of your computer, to navigating around the computer and to getting your system started. The remainder of the manual covers the following:

- **Chapter 2** A guide to using some of the main features of the computer e.g. the **storage devices** (**hard disk**, **optical device**, **7-in-1 card reader**, **ExpressCard/34/54**), **TouchPad** & **Mouse**, **Audio** & **Printer**.
- **Chapter 3** The computer's **power** saving options.
- **Chapter 4** The installation of the **drivers** and utilities essential to the operation or improvement of some of the computer's subsystems.
- **Chapter 5** An outline of the computer's built-in software or **BIOS** (Basic Input Output System).
- **Chapter 6** Instructions for **upgrading** your computer.
- **Chapter 7** A quick guide to the computer's **Fingerprint**, **Bluetooth**, **Wireless LAN**, **PC Camera, TPM** and **3.5G** modules (some of which may be **optional** depending on your purchase configuration).
- **Chapter 8** A **troubleshooting** guide.
- **Appendix A** Definitions of the **interface**, **ports**/**jacks** which allow your computer to communicate with external devices.
- **Appendix B** Information on the **Intel Video driver controls**.
- **Appendix C** The computer's **specification**.
- **Appendix D** Information on the ***Windows XP*** OS.

Advanced Users

If you are an advanced user you may skip over most of this Quick Start Guide. However you may find it useful to refer to ***"What to Install" on page 4 - 1***, ***"BIOS Utilities" on page 5 - 1*** and ***"Upgrading The Computer" on page 6 - 1*** in the reminder of the User's Manual. You may also find the notes marked with a ✎ of interest to you.

Beginners and Not-So-Advanced Users

Notes

Check the light colored boxes with the ✎ mark above to find detailed information about the computer's features.

If you are new to computers (or do not have an advanced knowledge of them) then the information contained in the Quick Start Guide should be enough to get you up and running. Eventually you should try to look through all the documentation (more detailed descriptions of the functions, setup and system controls are covered in the remainder of the User's Manual), but do not worry if you do not understand everything the first time. Keep this manual nearby and refer to it to learn as you go. You may find it useful to refer to the notes marked with a ✎ as indicated in the margin. For a more detailed description of any of the interface ports and jacks see ***"Interface (Ports & Jacks)" on page A - 1***.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the symbol. Also please note the safety and handling instructions as indicated in the *Preface*.

Not Included

Operating Systems (e.g. *Windows Vista*/*Windows XP*) and applications (e.g. word processing, spreadsheet and database programs) have their own manuals, so please consult the appropriate manuals.

Drivers

If you are installing new system software, or are re-configuring your computer for a different system, you will need to install the drivers listed in ***"Drivers & Utilities" on page 4 - 1***. Drivers are programs which act as an interface between the computer and a hardware component e.g. a wireless network module. It is very important that you install the drivers in the order listed in. You will be unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you); refer to ***Chapter 4*** for installation instructions.

Ports and Jacks

See ***"Notebook Ports and Jacks" on page A - 2*** for a description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

System Software

Your computer may already come with system software pre-installed. Where this is not the case, or where you are re-configuring your computer for a different system, you will find the following operating systems are supported.

Operating System & Version	Note
*Windows XP (Home or Professional)	In order to run ***Windows XP*** without limitations or decreased performance, your computer requires a minimum **512MB** of system memory (RAM)
Windows Vista (**64-bit**) Home Basic Edition	In order to run ***Windows Vista*** without limitations or decreased performance, your computer requires a minimum **1GB** of system memory (RAM).
Windows Vista (**64-bit**) Home Premium Edition	
Windows Vista (**64-bit**) Business/Enterprise/Ultimate Editions	

Table 1 - 1 **- Model Differences**

Note**: For information on the ***Windows XP OS (specifically power, video and driver information) see ***"Windows XP Information" on page D - 1***.

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
4. Attach the AC/DC adapter to the DC-In jack on the left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
5. Raise the lid/LCD to a comfortable viewing angle, and press the power button to turn the computer “on”.
6. Adjust the LCD panel to a comfortable viewing angle.
7. The LED indicators show the power and battery status of the computer.

Shutdown

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Lock Button Menu** in ***Windows Vista***. This will help prevent hard disk or system problems.

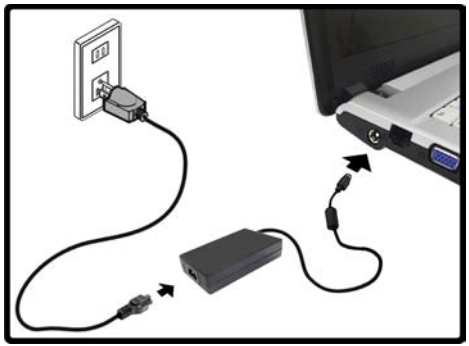


Figure 1 - 1 **- AC/DC Adapter In**

System Map: LCD Panel Open

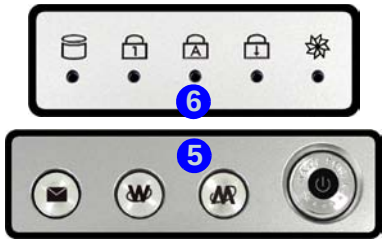
Figure 1 - 2
LCD Panel Open

1. Built-In PC Camera (**Optional**)
2. LCD
3. Speakers
4. Power Button
5. Hot Key Buttons
6. LED Status Indicators
7. Keyboard
8. Touchpad & Buttons
9. LED Power & Communication Indicators
10. Fingerprint Module (**Optional**)
11. Built-In Microphone

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are OFF if you are using the computer aboard aircraft.

Use the key combinations to toggle power to the **3.5G/WLAN/Bluetooth** modules, and check the LED indicator icon to see if the modules are powered on or not (see ***Table 1 - 5, on page 1 - 10***/ ***Table 1 - 2, on page 1 - 7***).



LED Indicators

The two sets of LED indicators (**LED Status Indicators** and **LED Power & Communication Indicators**) on the computer display helpful information about the current status of the computer.

Icon	Color	Description
	Green	Silent Mode Activated (see over)
	Off	Normal Mode Activated (see over)
	Green	Hard Disk Activity
	Green	Number Lock Activated
	Green	Caps Lock Activated
	Green	Scroll Lock Activated (to activate press Fn & Scr Lk)

Table 1 - 2 **- LED Status Indicators**

Icon	Color	Description
	Orange	DC Power is Plugged In
	Green	The Computer is On
	Blinking Green	The Computer is in Sleep Mode
	Orange	The Battery is Charging
	Green	The Battery is Fully Charged
	Blinking Orange	The Battery Has Reached Critically Low Power Status
	Green	The (**optional**) Wireless LAN Module is Powered On
	Orange	The (**optional**) Bluetooth Module is Powered On
	Green	The (**optional**) 3.5G Module is Powered On

Table 1 - 3 **- LED Power & Communication Indicators**

Hot Key Buttons & Keyboard

These buttons give instant access to the default Internet browser and e-mail program, and allow you to toggle the **Silent Mode** on/off with one quick button press.

Table 1 - 4 **- Hot Key Buttons**

Hot Key	Function
	Activate the Default E-Mail Browser
	Activate the Default Internet Program
	Toggle *Silent Mode (for power saving)

*When enabled, **Silent Mode** will reduce fan noise and save power consumption. Note this may reduce computer performance.

The keyboard has a numerical keypad for easy numeric data input, and features Function Keys to allow you to change operational features instantly.

Activate the **Number Lock** feature by pressing the **Num Lk** key at the top right of the keyboard. You may check if **Number Lock** is enabled or not by looking at the LED status indicators.

Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/AP-Key buttons unique to the system's regular keyboard may not work.

Keyboard

The keyboard has a numerical keypad for easy numeric data input, and features function keys to allow you to change operational features instantly. See *Table 1 - 5, on page 1 - 10* for full function key combination details.

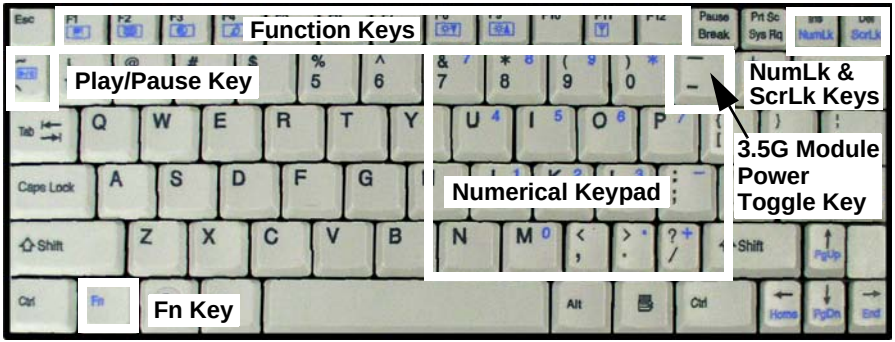


Figure 1 - 3 **- Keyboard**

Special Characters

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **NumLk** is on.

Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/ hot-keys unique to the system's regular keyboard may not work.

NumLk & ScrLk

Hold down the **Fn Key** and either NumLk or ScrLk to enable number or scroll lock, and check the LED indicator for status.

Function/Hot Key Indicators

The **function keys** (F1 - F12 etc.) will act as **hot keys** when pressed while the **Fn** key is held down. In addition to the basic function key combinations; visual indicators are available when the hot key utility is installed (see *"Hot Key" on page 4 - 6*). When the driver is installed, an icon will appear in the taskbar.

Keys	Function	Keys	Function
Fn + ~	Play/Pause (in Audio/Video Programs)	Fn + F7	Display Toggle
Fn +	3.5G Module Power Toggle	Fn + F8/F9	Brightness Decrease/Increase
Fn + F1	TouchPad Toggle	Fn + F10	PC Camera Power Toggle
Fn + F2	Turn LCD Backlight Off (Press a key to or use TouchPad to turn on)	Fn + F11	WLAN Module Power Toggle
Fn + F3	Mute Toggle	Fn + F12	Bluetooth Module Power Toggle
Fn + F4	Sleep Toggle		*Silent Mode Toggle
Fn + F5/F6	Volume Decrease/Increase	*When enabled, **Silent Mode** will reduce fan noise and save power consumption. Note this may reduce computer performance.	

Table 1 - 5 **- Function & Hot Key Indicators**

System Map: Front & Rear Views

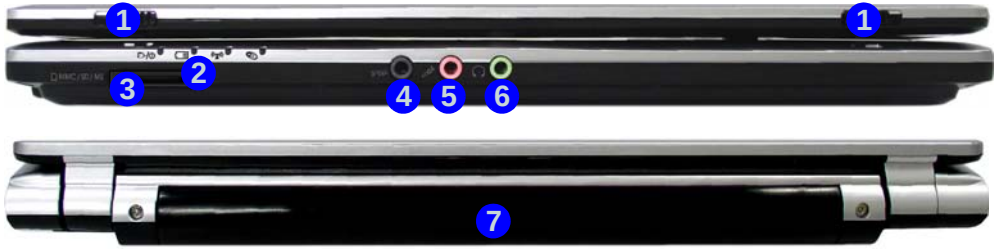


Figure 1 - 4
Front & Rear Views

1. LCD Latches
2. LED Power & Communication Indicators
3. 7-in-1 Card Reader
4. S/PDIF-Out Jack
5. Microphone-In Jack
6. Headphone-Out Jack
7. Battery

7-in-1 Card Reader

The card reader allows you to use the most popular digital storage card formats:

MMC (MultiMedia Card) / SD (Secure Digital) / MS (Memory Stick) /
MS Pro (Memory Stick Pro) / MS Duo (requires PC adapter) /
Mini SD (requires PC adapter) / RS MMC (requires PC adapter)

System Map: Left & Right Views

Figure 1 - 5
Left & Right Views

1. DC-In Jack
2. RJ-45 LAN Jack
3. External Monitor Port
4. Mini-IEEE 1394 Port
5. Vent/Fan Intake/ Outlet
6. 3 * USB 2.0 Ports
7. Optical Device Drive Bay (for CD/ DVD Device - see page ***2 - 3***)
8. RJ-11 Phone Jack
9. Security Lock Slot

Overheating

To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s) while the computer is in use.

Disk Eject Warning

Don't try to eject a CD/DVD while the system is accessing it. This may cause the system to "crash". Stop the disk first then eject it, or press the stop button twice.

CD/DVD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. Do not use a sharpened pencil or any object that may break and become lodged in the hole. Don't try to remove a floppy disk/CD/DVD while the system is accessing it. This may cause the system to "crash".

Changing DVD Regional Codes

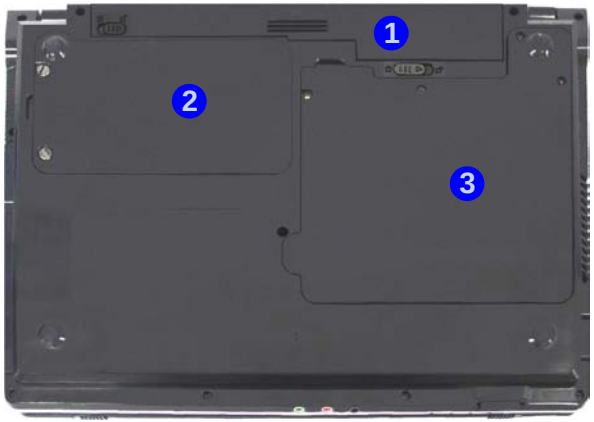
Go to the **Control Panel** and double-click **Device Manager (Hardware and Sound)**, then click the **+** next to **DVD/CD-ROM drives**. Double-click on the DVD-ROM device to bring up the **Properties** dialog box, and select the **DVD Region** (tab) to bring up the control panel to allow you to adjust the regional code (see ***"DVD Regional Codes" on page 2 - 5***).

DVD region detection is device dependent, not OS-dependent. You can select your module's region code **5** times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

System Map: Bottom View

Figure 1 - 6
Bottom View

1. Battery
2. Hard Disk Bay Cover (3.5G Module Location)
3. RAM & CPU Bay Cover



CPU

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Overheating

To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intake while the computer is in use.

Battery Information

Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges. See ***"Battery Information" on page 3 - 10*** for full instructions.

Windows Vista Start Menu & Control Panel

Most of the control panels, utilities and programs within ***Windows Vista*** (and most other ***Windows*** versions) are accessed from the **Start** menu. When you install programs and utilities they will be installed on your hard disk drive, and a shortcut will usually be placed in the **Start** menu and/or the desktop. Right-click the **Start menu** icon , and then select **Properties** if you want to customize the appearance of the **Start** menu.

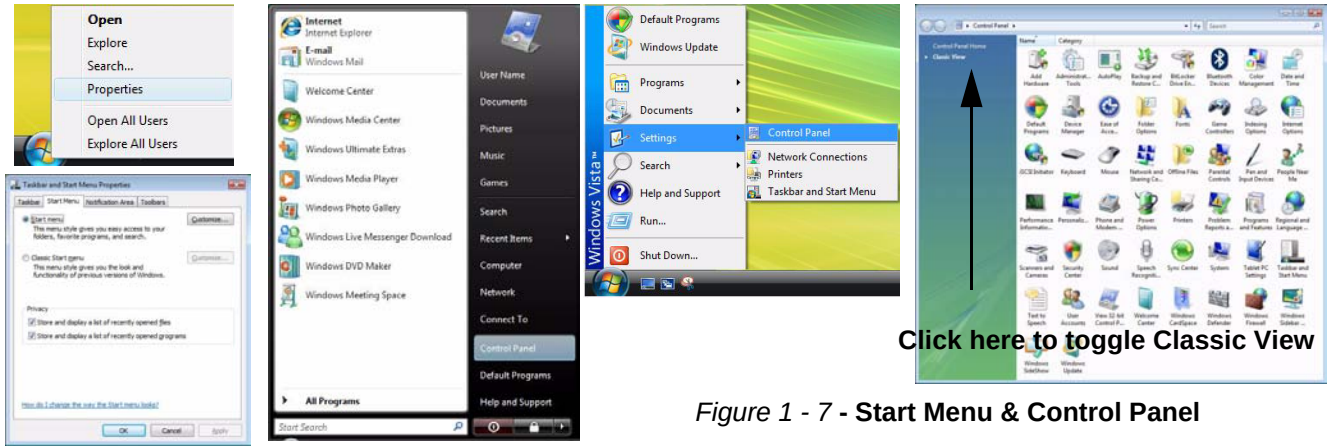


Figure 1 - 7 **- Start Menu & Control Panel**

In many instances throughout this manual you will see an instruction to open the **Control Panel**. The **Control Panel** is accessed from the **Start** menu, and it allows you to configure the settings for most of the key features in ***Windows*** (e.g. power, video, network, audio etc.). ***Windows Vista*** provides basic controls for many of the features, however many new controls are added (or existing ones are enhanced) when you install the drivers listed in ***Table , on page 4 - 3***. To see all controls it may be necessary to toggle to Classic View on.

Video Features

You can switch display devices, and configure display options, from the **Display Settings** control panel (in **Personalization**) in ***Windows Vista*** as long as the appropriate **Intel video driver** is installed. For more detailed video information see ***"Intel Video Driver Controls" on page B - 1***.

To access Display Settings in ***Windows Vista***:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Adjust screen resolution** under the **Appearance and Personalization** menu (or double-click **Personalization > Display Settings**).
3. Move the slider to the preferred setting in **Resolution:** 1 (***Figure 1 - 8 on page 1 - 17***).
4. Click the arrow, and scroll to the preferred setting In **Colors:** 2(***Figure 1 - 8 on page 1 - 17***).
5. Click **Advanced Settings** (button) 3 (***Figure 1 - 8 on page 1 - 17***) and click **Intel(R) GMA Driver for mobile** (tab).
6. Click **Graphics Properties (button)** 4 (***Figure 1 - 8 on page 1 - 17***) to access the **Intel GMA** control panel (this control panel can also be accessed by double-clicking **Intel(R) GMA Driver for mobile** in **Classic View**).
7. The **Intel GMA** control panel can also be accessed by clicking the icon in the taskbar and selecting **Graphics Properties** from the menu.

Display Devices & Options

Besides the built-in LCD, you can also use an **external VGA monitor** (CRT) or **external Flat Panel Display** connected to the external monitor port as your display device.

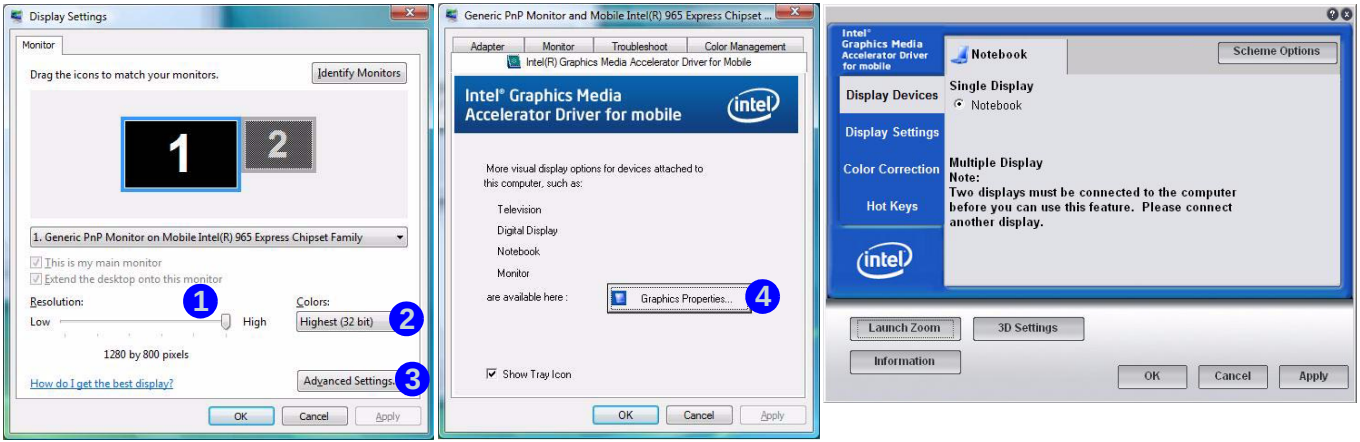


Figure 1 - 8 **- Display Properties Desktop**

Intel Display Mode	Description
Single Mode	One of the connected displays is used as the display device
Intel(R) Dual Display Clone Mode	Both connected displays output the same view and may be configured independently
Extended Desktop Mode	Both connected displays are treated as separate devices, and act as a virtual desktop

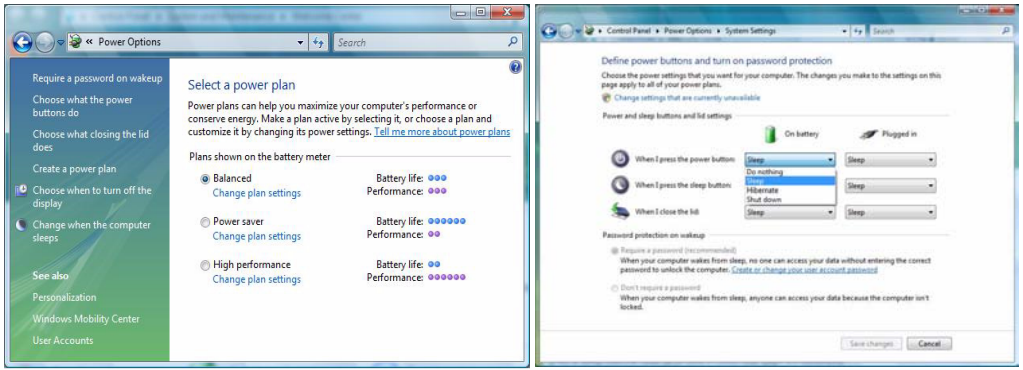
Table 1 - 6 **- Display Options**

Power Options

The **Power Options** (**Hardware and Sound** menu) control panel icon in ***Windows*** (see page ***1 - 15***) allows you to configure power management features for your computer. You can conserve power by means of **power plans** and configure the options for the **power button**, **sleep button**, **computer lid (when closed)**, **display** and **sleep** mode from the left menu. Note that the **Power saver** plan may have an affect on computer performance.

Click to select one of the existing plans, or click ***Create a power plan*** in the left menu and select the options to create a new plan. Click ***Change Plan Settings*** and click ***Change advanced power settings*** to access further configuration options.

Pay attention to the instructions on battery care in ***"Battery Information" on page 3 - 10***.


Power Options
Search
Require a password on wakeup
Choose what the power buttons do
Choose what closing the lid does
Create a power plan
Choose when to turn off the display
Change when the computer sleeps
See also
Personalization
Windows Mobility Center
User Accounts
Select a power plan
Power plans can help you maximize your computer's performance or conserve energy. Make a plan active by selecting it, or choose a plan and customize it by changing its power settings. Tell me more about power plans
Plans shown on the battery meter
Balanced
Change plan settings
Battery life:
Performance:
Power saver
Change plan settings
Battery life:
Performance:
High performance
Change plan settings
Battery life:
Performance:
Control Panel ▸ Power Options ▸ System Settings
Define power buttons and turn on password protection
Change settings that are currently unavailable
Power and sleep buttons and lid settings
On battery
Plugged in
When I press the power button:
When I press the sleep button:
When I close the lid:
Sleep
Do nothing
Sleep
Hibernate
Shut down
Password protection on wakeup
Save changes
Cancel

Note: **Sleep** is the default power saving state in ***Windows Vista***

Figure 1 - 9 **- Power Options**

Chapter 2: Features & Components

Overview

Read this chapter to learn more about the following main features and components of the computer:

- Hard Disk Drive
- Optical (CD/DVD) Device
- 7-in-1 Card Reader
- ExpressCard Slot
- TouchPad and Buttons/Mouse
- Audio Features
- Adding a Printer

Power Safety

Before attempting to access any of the internal components of your computer please ensure that the machine is not connected to the AC power, and that the machine is turned off. Also ensure that all peripheral cables, including phone lines, are disconnected from the computer.

Hard Disk Drive

The hard disk drive is used to store your data in the computer. The hard disk can be taken out to accommodate other 2.5" serial (SATA) hard disk drives (see *"Storage" on page C - 3*) with a height of 9.5 mm.

The hard disk is accessible from the bottom of your computer as seen below. For further details see *"Upgrading the Hard Disk Drive" on page 6 - 4*.

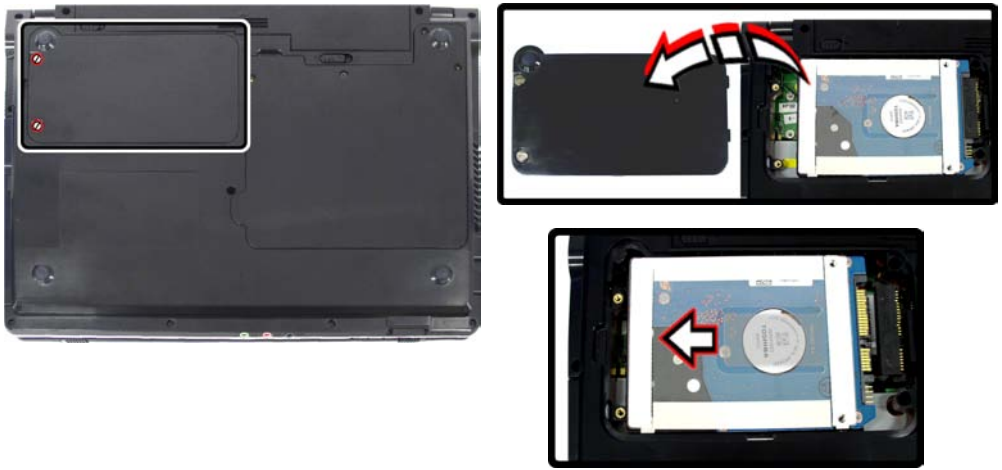


Figure 2 - 1
Hard Disk Location

Optical (CD/DVD) Device

There is a bay for a 5.25" optical (CD/DVD) device (12.7mm height). The actual device will depend on the module you purchased (see *"Storage" on page C - 3*). The optical device is usually labeled "**Drive D:**" and may be used as a boot device if properly set in the **BIOS** (see *"Boot Menu" on page 5 - 15*).

Loading Discs

To insert a CD/DVD, press the open button 1 and carefully place a CD/DVD onto the disc tray with label-side facing up (use just enough force for the disc to click onto the tray's spindle). Gently push the CD/DVD tray in until its lock "clicks" and you are ready to start. The busy indicator 2 will light up while data is being accessed, or while an audio/video CD, or DVD, is playing. If power is unexpectedly interrupted, insert an object such as a straightened paper clip into the emergency eject hole 3 to open the tray.

Figure 2 - 2
Optical Device

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within ***Windows***. Click the **Volume** icon on the taskbar to check the setting (see *"Audio Features" on page 2 - 9*).

CD Emergency Eject

If you need to manually eject a CD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. However please do NOT use a sharpened pencil or similar object that may break and become lodged in the hole.

Disk Eject Warning

Don't try to remove a CD/DVD while the system is accessing it. This may cause the system to "crash".

Handling CDs or DVDs

Proper handling of your CDs/DVDs will prevent them from being damaged. Please follow the advice below to make sure that the data stored on your CDs/DVDs can be accessed.

Note the following:

- Hold the CD or DVD by the edges; do not touch the surface of the disc.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disc.
- Do not store or place the CD or DVD in high-temperature areas.
- Do not use benzene, thinner, or other cleaners to clean the CD or DVD.
- Do not bend the CD or DVD.
- Do not drop or subject the CD or DVD to shock.

DVD Regional Codes

To change the DVD regional codes see *"Changing DVD Regional Codes" on page 1 - 13*.

DVD Regional Coding	
Region	**Geographical Location**
1	USA, Canada
2	Western Europe, Japan, South Africa, Middle East & Egypt
3	South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
4	South & Central America, Mexico, Australia, New Zealand
5	N Korea, Russia, Eastern Europe, India & Most of Africa
6	China

Table 2 - 1
DVD Regional Coding

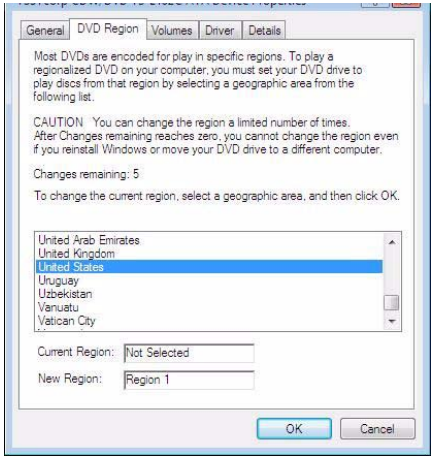

General
DVD Region
Volumes
Driver
Details
Most DVDs are encoded for play in specific regions. To play a regionalized DVD on your computer, you must set your DVD drive to play discs from that region by selecting a geographic area from the following list.
CAUTION You can change the region a limited number of times. After Changes remaining reaches zero, you cannot change the region even if you reinstall Windows or move your DVD drive to a different computer.
Changes remaining: 5
To change the current region, select a geographic area, and then click OK.
United Arab Emirates
United Kingdom
United States
Uruguay
Uzbekistan
Vanuatu
Vatican City
Current Region:
Not Selected
New Region:
Region 1
OK
Cancel

Figure 2 - 3
DVD Regions

Card Reader Cover

Make sure you keep the rubber cover provided in the card reader when not in use. This will help prevent foreign objects and/or dust getting in to the card reader.

7-in-1 Card Reader

The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device, and can be accessed in the same way as your hard disk (s). Make sure you install the Card Reader driver (see *"CardReader" on page 4 - 6*).

- MMC (MultiMedia Card)
- SD (Secure Digital)
- MS (Memory Stick)
- MS Pro (Memory Stick Pro)
- MS Duo (requires PC adapter*)
- Mini SD (requires PC adapter*)
- RS MMC (requires PC adapter*)

*__Note__: The PC adapters are usually supplied with these cards.

Figure 2 - 4
Right View

1. Card Reader

ExpressCard Slot

The computer is equipped with an **ExpressCard/34/54** slot that reads Express Card/34 and ExpressCard/54 formats. ExpressCards are the successors to PCMCIA (PC Cards). Make sure you install the Card Reader driver (see *"CardReader" on page 4 - 6*).

ExpressCard/54 is used for applications which require a larger interface slot, e.g. CompactFlash card reader. The number denotes the card width; 54mm for the Express Card/54 and 34mm for the ExpressCard/34.

Figure 2 - 5
Left View

1. Express Card Slot

Inserting and Removing ExpressCards

- Align the ExpressCard with the slot and push it in until it locks into place (as pictured in the generic figure below).
- To remove an ExpressCard, simply press the card to eject it.

Figure 2 - 6
Inserting & Removing Express Cards

ExpressCard Slot Cover

Make sure you keep the rubber cover provided in the ExpressCard slot when not in use. This will help prevent foreign objects and/or dust getting in to the ExpressCard Slot.

Mouse Driver

If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

TouchPad and Buttons/Mouse

The TouchPad is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports. The TouchPad buttons function in much the same way as a two-button mouse.

Once you have installed the TouchPad driver (see ***"TouchPad" on page 4 - 5***) you can configure the functions by double-clicking the TouchPad driver icon on the **taskbar**. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensitivity options to your preferences. You will find further information at www.synaptics.com.

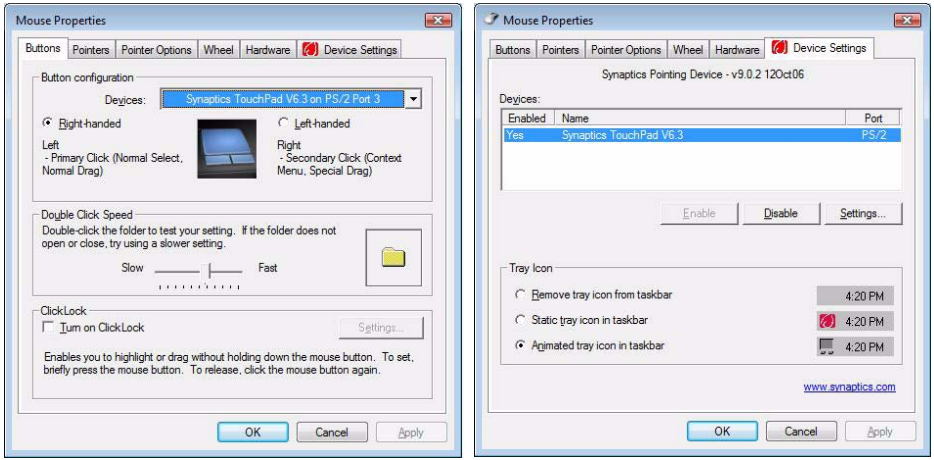
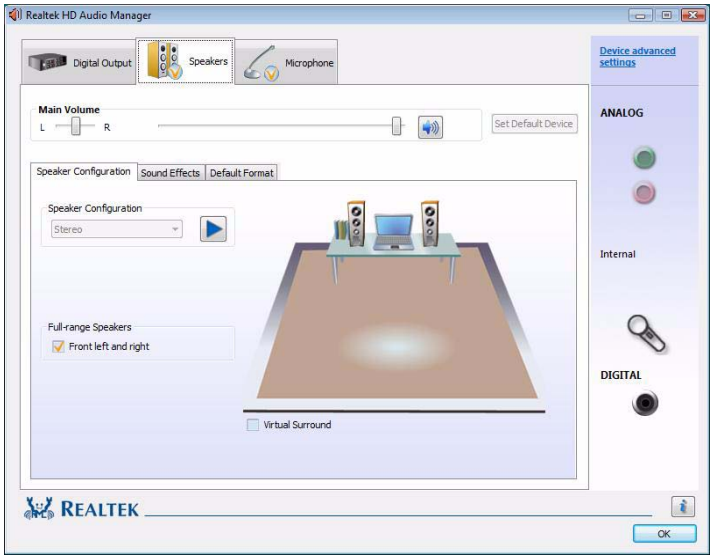


Figure 2 - 7
Mouse Properties

Audio Features

You can configure the audio options on your computer from the **Sound** control panel in ***Windows***, or from the **Realtek HD Audio Manager** icon in the taskbar/control panel (right-click the taskbar icon to bring up an audio menu). The volume may also be adjusted by means of the **Fn** + **F5/F6** key combination.

Right-click the icon to access the menu above.



Sound Volume Adjustment

The sound volume level is set using the volume control within ***Windows*** (and the volume function keys on the computer). Click the volume icon in the taskbar to check the setting.

Figure 2 - 8
Realtek Audio Manager

Adding a Printer

The most commonly used peripheral is a printer. The following conventions will help you to add a printer; however it is always best to refer to the printer manual for specific instructions and configuration options.

USB Printer

Most current printers have a USB interface connection. You may use any one of the ports to connect the printer.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Turn ON the computer.
3. Turn ON the printer.
4. Connect the printer's USB cable to one of the USB ports on the computer.
5. ***Windows*** will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Parallel Printer

This is still a very common type of printer. The install instructions are in the sidebar, however you will need to purchase a parallel to USB converter.

Parallel Printer

After setting up the printer attach the parallel cable to the printer.

Connect the printer's parallel cable to the Parallel to USB converter, and then plug the converter into the USB port.

Turn ON the printer, then turn ON the computer.

Windows will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Chapter 3: Power Management

Overview

To conserve power, especially when using the battery, your computer power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system. This chapter covers:

- The Power Sources
- Turning on the Computer
- Power Plans
- Power-Saving States
- Configuring the Power Buttons
- Battery Information

The computer uses enhanced power saving techniques to give the operating system (OS) direct control over the power and thermal states of devices and processors. For example, this enables the OS to set devices into low-power states based on user settings and information from applications.

OS Note

Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.

(**Note**: All pictures used on the following pages are from the ***Windows Vista*** OS.)

The Power Sources

The computer can be powered by either an AC/DC adapter or a battery pack.

AC/DC Adapter

Use only the AC/DC adapter that comes with your computer. The wrong type of AC/DC adapter will damage the computer and its components.

1. Attach the AC/DC adapter to the DC-in jack on the left of the computer.
2. Plug the AC power cord into an outlet, and then connect the AC power cord to the AC/DC adapter.
3. Raise the lid/LCD to a comfortable viewing angle.
4. Press the power button to turn “On”.

Battery

The battery allows you to use your computer while you are on the road or when an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. **To increase battery life, let the battery discharge completely before recharging** (see ***“How do I completely discharge the battery?” on page 3 - 14***).

We recommend that you do not remove the battery. For more information on the battery, please refer to ***“Battery Information” on page 3 - 10***.

Turning on the Computer

Now you are ready to begin using your computer. To turn it on simply press the power button on the front panel.

When the computer is on, you can use the power button as a Sleep/Hibernate hotkey button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force the computer to shut down). Use **Power Options** (**Hardware and Sound** menu) control panel in ***Windows Vista*** to configure this feature.

Forced Off

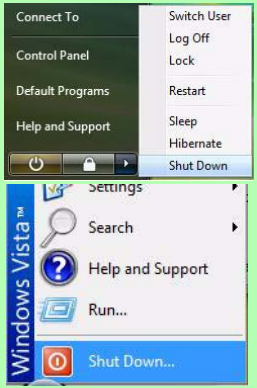
If the system "hangs", and the **Ctrl + Alt + Del** key combination doesn't work, press the power button for **4 seconds**, or longer, to force the system to turn itself off.

Power Button Sleep

Sleep is the default power mode when the power button is pressed for less than 4 seconds. You may configure the options for the power button from the **Power Options** (**Hardware and Sound** menu) control panel in ***Windows Vista*** (see your OS's documentation, or ***"Configuring the Power Buttons" on page 3 - 8*** for details).

Shut Down

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Lock Button Menu** in ***Windows Vista***. This will help prevent hard disk or system problems.



Resuming Operation

See *Table 3 - 1, on page 3 - 9* for information on how to resume from a power-saving state.

Password

It is recommended that you enable a password on system resume in order to protect your data.

Power Plans

The computer can be configured to conserve power by means of **power plans**. You can use (or modify) an existing **power plan**, or create a new one.

The settings may be adjusted to set the **display** to turn off after a specified time, and to send the computer into **Sleep** after a period of inactivity.

Click ***Change plan settings*** and then click ***Change advanced power settings*** to access further configuration options in **Advanced Settings**.

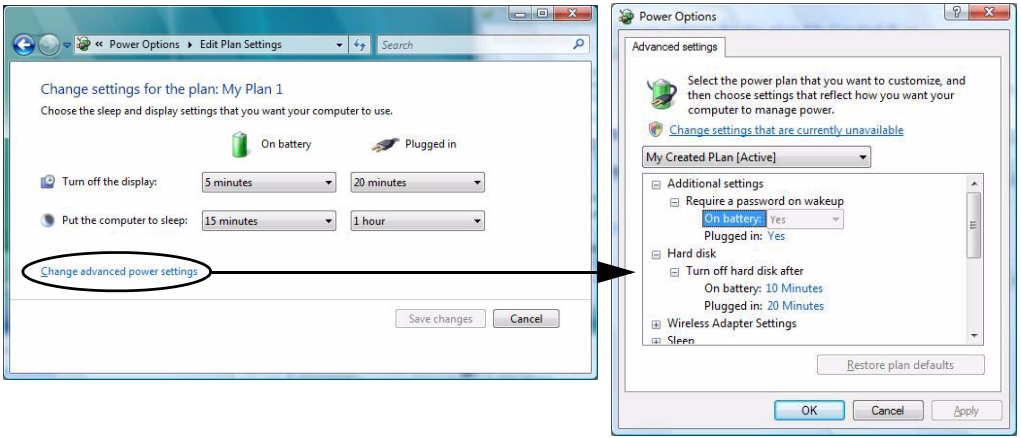


Figure 3 - 1
Power Plan Advanced Settings

Each ***Windows* power plan** will also adjust the processor performance of your machine in order to save power. This is worth bearing in mind if you are experiencing any reduced performance (especially under DC/battery power).

Choose **High performance** for maximum performance when the computer is powered from an AC power source. Choose the **Power saver** (bear in mind that this scheme may slow down the overall performance of the computer in order to save power) for maximum power saving when the computer is battery (DC power) powered.

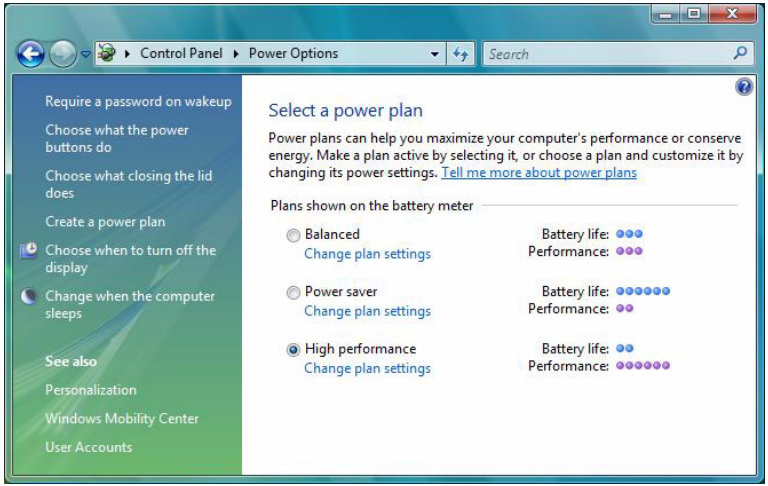

Control Panel ▸ Power Options
Search
Require a password on wakeup
Choose what the power buttons do
Choose what closing the lid does
Create a power plan
Choose when to turn off the display
Change when the computer sleeps
See also
Personalization
Windows Mobility Center
User Accounts
Select a power plan
Power plans can help you maximize your computer's performance or conserve energy. Make a plan active by selecting it, or choose a plan and customize it by changing its power settings. Tell me more about power plans
Plans shown on the battery meter
Balanced
Change plan settings
Battery life:
Performance:
Power saver
Change plan settings
Battery life:
Performance:
High performance
Change plan settings
Battery life:
Performance:

Figure 3 - 2
Power Plans

Power Button

The **Power Button** in the Start Menu (in Classic View use the Shut Down button) can be used to send the computer into a power-saving state.

Sleep Mode & Mobile PC Battery

A mobile PC in **Sleep** uses very little battery power.

After an extended period of time the computer will save any open documents and applications to hard disk.

Power-Saving States

You can use power-saving states to stop the computer's operation and restart where you left off. **Sleep** is the default power-saving state in ***Windows Vista***.

Earlier versions of ***Windows*** used Stand By and Hibernate as system power-saving states. ***Windows Vista*** combines the features of Stand By and Hibernate into the default **Sleep** power-saving state.

Sleep

In **Sleep** all of your work, settings and preferences are saved to memory before the system sleeps. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter **Sleep** to save power.

The PC wakes from **Sleep within seconds** and will return you to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

If your mobile PC in **Sleep** is running on battery power the system will use only a minimum amount of power. After an extended period the system will save all the information to the hard disk and shut the computer down before the battery becomes depleted.

Hibernate

Hibernate uses the least amount of power of all the power-saving states and saves all of your information on a part of the hard disk before it turns the system off. If a power failure occurs the system can restore your work from the hard disk; if a power failure occurs when work is saved only to memory, then the work will be lost. **Hibernate** will also return you to where you last left off within seconds. You should put your mobile PC into **Hibernate** if you will not use the computer for a period of time, and will not have the chance to charge the battery.

Shut Down

You should **shut down** the computer if you plan to install new hardware (don't forget to remove the battery and follow all the safety instructions in **Chapter 6**), plan to be away from the computer for several days, or you do not need it to wake up and run a scheduled task. Returning to full operation from **shut down** takes longer than from **Sleep** or **Hibernate**.

Figure 3 - 3
Lock Button menu

Silent Mode

You can use **Silent Mode** to reduce power consumption and fan noise.

Use the **Silent Mode** hot key to toggle this mode on/off.

On screen visual indicators and the LED indicator will display the **Silent Mode** status (see ***Table 1 - 3, on page 1 - 7*** and ***Table 1 - 5, on page 1 - 10***).

Note **Silent Mode** may reduce computer performance.

Password Protection

It is recommended that you enable a password on wake up in order to protect your data.

However you can disable this setting from the **Power Options** menu by clicking ***Require a password on wakeup*** in the left menu, and selecting the options (click ***Change settings that are currently unavailable***).

Configuring the Power Buttons

The power/sleep button (**Fn + F4** key combo) and closed lid may be set to send the computer in to a power-saving state.

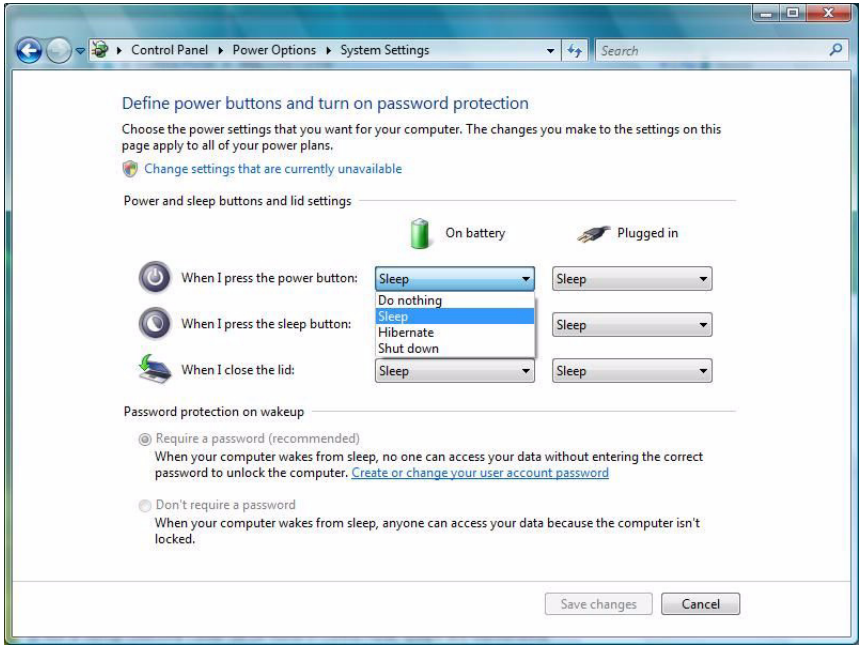

Control Panel ▸ Power Options ▸ System Settings
Search
Define power buttons and turn on password protection
Choose the power settings that you want for your computer. The changes you make to the settings on this page apply to all of your power plans.
Change settings that are currently unavailable
Power and sleep buttons and lid settings
On battery
Plugged in
When I press the power button:
Sleep
Sleep
Do nothing
Sleep
Hibernate
Shut down
When I press the sleep button:
Sleep
When I close the lid:
Sleep
Sleep
Password protection on wakeup
Require a password (recommended)
When your computer wakes from sleep, no one can access your data without entering the correct password to unlock the computer. Create or change your user account password
Don't require a password
When your computer wakes from sleep, anyone can access your data because the computer isn't locked.
Save changes
Cancel

Figure 3 - 4
Power Options Define Power Buttons

Resuming Operation

You can resume operation from power-saving states by pressing the power button, or in some cases pressing the sleep button (**Fn + F4** key combo).

Power Status	Icon Color	To Resume
Power Off	Off	Press the Power Button
Sleep	Blinking Green	Press the Power Button Press the Sleep Button (Fn + F4 Key Combo)
Hibernate	Off (battery) Orange (AC/DC adapter)	Press the Power Button
Display Turned Off	Green	Press a Key or Move the Mouse/Touchpad

Power Button

When the computer is on, you can use the power button as a Sleep/Hibernate/Shut Down hot key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force the computer to shut down).

Closing the Lid

If you have chosen to send the computer to **Sleep** when the lid is closed, raising the lid will wake the system up.

Table 3 - 1 **Resuming Operation**

Low Battery Warning

When the battery is critically low, immediately connect the AC/DC adapter to the computer or save your work, otherwise, the unsaved data will be lost when the power is depleted.

Battery Information

Please follow these simple guidelines to get the best use out of your battery.

Battery Power

Your computer's battery power is dependent upon many factors, including the programs you are running, and peripheral devices attached. You can set actions to be taken (e.g. Shut down, Hibernate etc.), and set critical and low battery levels from **power plan Advanced Settings** (see *Figure 3 - 1 on page 3 - 4*).

Click the battery icon in the taskbar to see the current battery level and charge status.

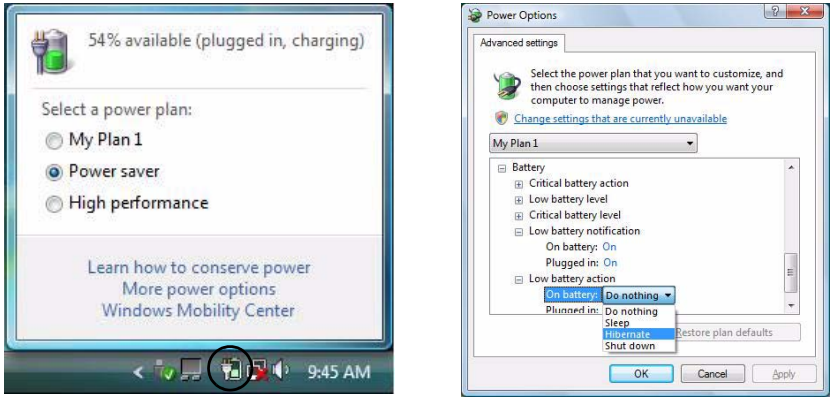


Figure 3 - 5
Battery Icon (Taskbar) & Battery Advanced Settings

Conserving Battery Power

- Use a **power plan** that conserves power (e.g **Power saver**), however note that this may have an affect on computer performance.
- Lower the brightness level of the LCD display. The system will decrease LCD brightness slightly to save power when it is not powered by the AC/DC adapter.
- Reduce the amount of time before the display is turned off.
- Close wireless, Bluetooth, modem or communication applications when they are not being used.
- Disconnect/remove any unnecessary external devices e.g. USB devices, ExpressCards etc.

Windows Mobility Center

The **Windows Mobility Center** control panel provides an easy point of access for information on battery status, power plans used and wireless device status etc.

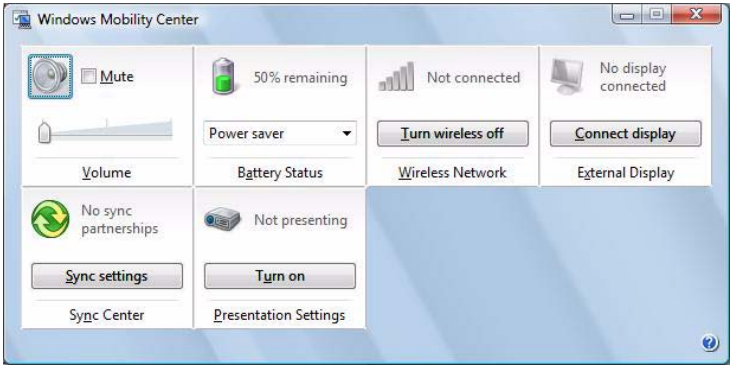


Figure 3 - 6
Windows Mobility Center

Battery Life

Battery life may be shortened through improper maintenance. **To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days**.

We recommend that you do not remove the battery yourself. If you do need to remove the battery for any reason see ***"Removing the Battery" on page 6 - 3***.

New Battery

Always completely discharge, then fully charge, a new battery (see ***"Battery FAQ" on page 3 - 14*** for instructions on how to do this).

Recharging the Battery with the AC/DC Adapter

The battery pack automatically recharges when the AC/DC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is less. (Refer to ***"- LED Status Indicators" on page 1 - 7*** for information on the battery charge status, and to ***"Battery Information" on page 3 - 10*** for more information on how to maintain and properly recharge the battery pack.)

Proper handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances
- DO NOT expose the battery to fire or high temperatures, it may explode
- DO NOT connect the metal terminals (+, -) to each other

Damaged Battery Warning

Should you notice any physical defects (e.g. the battery is bent out of shape after being dropped), or any unusual smells emanating from the notebook battery, shut your computer down immediately and contact your service center. If the battery has been dropped we do not recommend using it any further, as even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire. It is recommended that you replace your computer battery every two years.

Caution

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery FAQ

How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer even if a message indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own.

1. Save and close all files and applications.
2. **Create** a **power plan** for discharging the battery and set all the options to **Never**.
3. Click ***Change plan settings*** (after saving it) and click ***Change advanced power settings***.

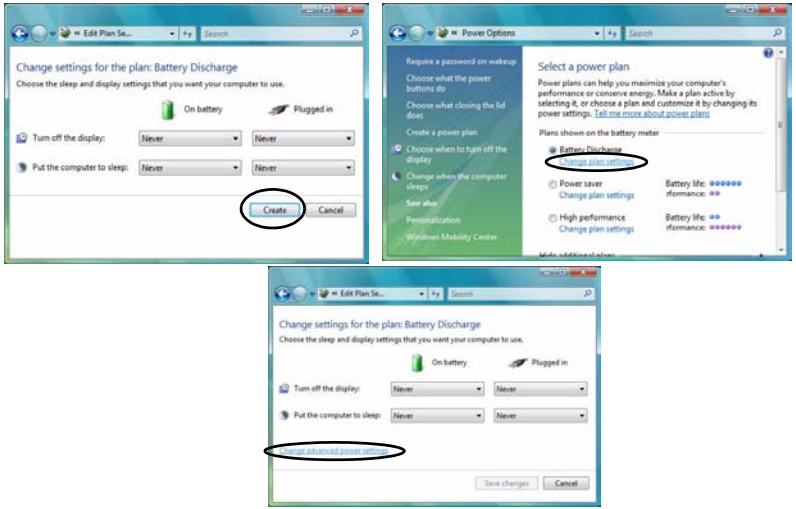

Change settings for the plan: Battery Discharge
Choose the sleep and display settings that you want your computer to use.
On battery
Plugged in
Turn off the display:
Never
Put the computer to sleep:
Never
Create
Cancel
Power Options
Select a power plan
Power plans can help you maximize your computer's performance or conserve energy. Make a plan active by selecting it, or choose a plan and customize it by changing its power settings.
Plans shown on the battery meter
Battery Discharge
Change plan settings
Power saver
High performance
Change advanced power settings
Save changes
Cancel

Figure 3 - 7
Power Plan Create

4. Scroll down to **Battery** and click **+** to expand the battery options.
5. Choose the options below (click **Yes** if a warning appears):

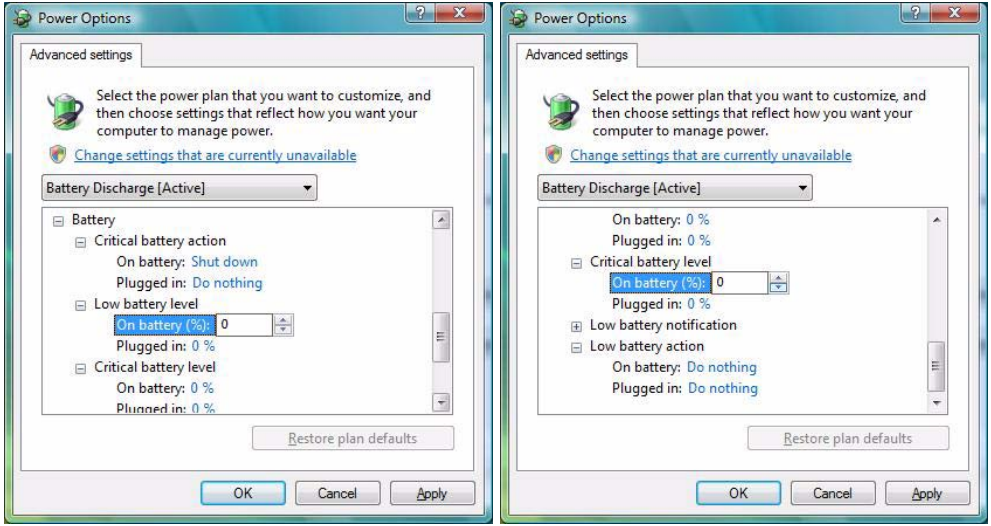

Power Options
Advanced settings
Select the power plan that you want to customize, and then choose settings that reflect how you want your computer to manage power.
Change settings that are currently unavailable
Battery Discharge [Active]
Battery
Critical battery action
On battery: Shut down
Plugged in: Do nothing
Low battery level
On battery (%): 0
Plugged in: 0 %
Critical battery level
On battery: 0 %
Restore plan defaults
OK
Cancel
Apply
Power Options
Advanced settings
Select the power plan that you want to customize, and then choose settings that reflect how you want your computer to manage power.
Change settings that are currently unavailable
Battery Discharge [Active]
On battery: 0 %
Plugged in: 0 %
Critical battery level
On battery (%): 0
Plugged in: 0 %
Low battery notification
Low battery action
On battery: Do nothing
Plugged in: Do nothing
Restore plan defaults
OK
Cancel
Apply

Figure 3 - 8
Power Options Advanced Settings - Battery

- Low battery levels = 0%
- Critical battery Levels = 0%
- Low battery action = Do Nothing
- Critical battery action (On battery) = Shut Down
- Critical battery action (Plugged in) = Do Nothing

How do I fully charge the battery?
When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?
Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Chapter 4: Drivers & Utilities

This chapter deals with installing the drivers and utilities essential to the operation or improvement of some of the computer's subsystems. The system takes advantage of some newer hardware components for which the latest versions of most available operating systems haven't built in drivers and utilities. Thus, some of the system components won't be auto-configured with an appropriate driver or utility during operating system installation. Instead, you need to manually install some system-required drivers and utilities.

What to Install

The ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** contains the drivers and utilities necessary for the proper operation of the computer.

Table , on page 4 - 3 lists what you need to install and **it is very important that the drivers are installed in the order indicated** (see ***"Driver Installation" on page D - 27*** for ***Windows XP*** information).

Module Driver Installation

The procedures for installing drivers for the **Fingerprint**, **Bluetooth**, **Wireless LAN**, **PC Camera**, **TPM**, **3.5G** and **Intel Turbo Memory** modules are provided in ***"Modules & Options" on page 7 - 1***.

Driver Installation

Insert the *Device Drivers & Utilities + User's Manual CD-ROM* and click ***Install Drivers/Option Drivers*** (button).

If you wish to install the drivers manually see overleaf for the driver path information.

Figure 4 - 1 **- Drivers Installer Screen 1**

1. Check the driver installation order from ***Table , on page 4 - 3*** (**the drivers must be installed in this order**) which is the same as that listed in the ***Drivers Installer*** menu below.
2. Click to select the driver you wish to install, after installing each driver it will become grayed out (if you need to reinstall any driver, click the **Unlock** button).
3. Follow the instructions for each individual driver installation procedure as listed on the following pages.

Figure 4 - 2 **- Drivers Installer Screen 2**

Driver	Page	Driver Location
Video (VGA)	*Page 4 - 5*	**Vista 64bit**: X:\Drivers\Video\vista64\Setup.exe
Audio	*Page 4 - 5*	**Vista 64bit**: X:\Drivers\Audio\Setup.exe
Modem	*Page 4 - 5*	**Vista 64bit**: X:\Drivers\Modem\ssetup.exe
LAN	*Page 4 - 5*	**Vista 64bit**: X:\Drivers\Lan\setup.exe
TouchPad	*Page 4 - 5*	**Vista 64bit**: X:\Drivers\TouchPad\WinWDF\x64\dpinst.exe
CardReader	*Page 4 - 6*	**Vista 64bit**: X:\Drivers\CardReader\Setup.exe
Hot Key	*Page 4 - 6*	**Vista 64bit**: X:\Drivers\Hotkey\Setup.exe
PC Camera Module	*Page 7 - 3*	**Vista 64bit**: X:\Drivers\Options\Camera\Sertek\UVC\setup.exe (for **1.3M** pixel Camera) **Vista 64bit**: X:\Drivers\Options\Camera\Sertek\nonUVC\setup.exe (for **1.3M** pixel Camera) **Vista 64bit**: X:\Drivers\Options\Camera\Dmax\Setup.exe (for **2.0M** pixel Camera)
Wireless LAN Module	*Page 7 - 11* *Page 7 - 12*	**Vista 64bit**: X:\Drivers\Options\WLAN\Intel\Autorun.exe (for **Intel WLAN**) **Vista 64bit**: X:\Drivers\Options\WLAN\GU-700\Setup.exe (for **Realtek WLAN**)
Bluetooth Module	*Page 7 - 17*	**Vista 64bit**: X:\Drivers\Options\Bluetooth\setup.exe
3.5G Module	*Page 7 - 24*	**Vista 64bit**: X:\Options\3G\3G.msi
Fingerprint Reader Module	*Page 7 - 32*	**Vista 64bit**: X:\Drivers\FingerPrint\Application\x64\autorun.exe
Trusted Platform Module	*Page 7 - 38*	**Vista 64bit**: X:\Drivers\Options\TPM\setup.exe
Intel Turbo Memory Module	*Page 7 - 38*	**Vista 64bit**: X:\Drivers\Options\Robson\Setup.exe

Table 4 - 1- **Driver Installation and Location**

Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver.To do this go to the **Control Panel** in the ***Windows OS*** and double-click the **Programs and Features** icon (**Programs** > **Uninstall a program**). Click to select the driver (if it is not listed see below) and click **Uninstall**, and then follow the on screen prompts (it may be necessary to restart the computer). Reinstall the driver as outlined in this chapter.

If the driver is not listed in the **Programs and Features** menu:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Double-click **Device Manager** (**Hardware and Sound > Device Manager**).
3. Double-click the **device** you wish to update/reinstall the driver for (you may need to click "+" to expand the selection).
4. Click **Driver** (tab) and click the **Update Driver** or **Uninstall** button and follow the on screen prompts.

User Account Control (Win Vista)

If a **User Account Control** prompt appears as part of the driver installation procedure, click **Continue** or **Allow**, and follow the installation procedure as directed.

Windows Security Message

If you receive a ***Windows*** security message as part of the driver installation process. Just click ***"Install this driver software anyway"*** or **Install** to continue the installation procedure.

You will receive this message in cases where the driver has been released after the version of ***Windows*** you are currently using. All the drivers provided will have already received certification for ***Windows***.

New Hardware Found

If you see the message "**New Hardware Found**" (**Found New Hardware Wizard**) during the installation procedure (**other than when outlined in the driver install procedure**), click **Cancel** to close the window, and follow the installation procedure.

Driver Installation Procedure

Manual Driver Installation

If you wish to install the drivers manually, click the Exit button to quit the Drivers Installer application, and then browse to the executable file in the location listed in this table and follow the installation procedure for each driver. Note that X is the drive letter assigned to the CD/DVD-ROM drive.

Video (VGA)

1. Click **1.Install VGA Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Audio

1. Click **2.Install Audio Driver > Yes**.
2. Click **Next**.
3. Click **Finish** to restart the computer.

Modem

1. Click **3.Install Modem Driver > Yes**.
2. Click **OK**.
3. The modem is ready for dial-up configuration.

Modem Country Selection

Go to the **Phone and Modem Options** control panel (**Hardware and Sound**) and make sure the modem country selection is appropriate for you.

LAN

1. Click **4.Install Lan Driver > Yes**.
2. Click **Next** > **Install**.
3. Click **Finish**.
4. The network settings can mow be configured.

TouchPad

1. Click **5.Install Touchpad Driver > Yes**.
2. Click **Next**.
3. Click **Finish > Restart Now** to restart the computer.

CardReader

1. Click **6.Install Cardreader Driver > Yes**.
2. Click **Next > Next**.
3. Click **Finish** to restart the computer.

Hot Key

1. Click **7.Install Hotkey Driver > Yes**.
2. Click **Next > Install**.
3. Click **Finish > Finish** to restart the computer.

PC Camera Module

See the introduction in *"PC Camera Module" on page 7 - 2*, and check the installation procedure.

Wireless LAN Module

See the introduction in *"Wireless LAN Module" on page 7 - 11*, and check the installation procedure.

Bluetooth Module

See the introduction in *"Bluetooth Module" on page 7 - 17*, and check the installation procedure.

3.5G Module

See the introduction in *"3.5G Module" on page 7 - 21*, and check the installation procedure.

Fingerprint Reader Module

See the introduction in *"Fingerprint Reader Module" on page 7 - 32*, and check the installation procedure.

Trusted Platform Module

See the introduction in *"Trusted Platform Module" on page 7 - 36*, and check the installation procedure.

Intel Turbo Memory Technology Driver

See the introduction in *"Intel Turbo Memory Module" on page 7 - 48*, and check the installation procedure.

Chapter 5: BIOS Utilities

Overview

This chapter gives a brief introduction to the computer's built-in software:

Diagnostics: The **POST** (Power-On Self Test)

Configuration: The ***Setup*** utility
If your computer has never been set up, or you are making important changes to the system (e.g. hard disk setup), then you should review this chapter first and note the original settings found in ***Setup***. Even if you are a beginner, keep a record of the settings you find and any changes you make. This information could be useful if your system ever needs servicing.

There is one general rule: *Don't make any changes unless you are sure of what you are doing*. Many of the settings are required by the system, and changing them could cause it to become unstable or worse. If you have any doubts, consult your service representative.

BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *Set-up* and restore the ***Set-up Defaults*** with <**F9**>.

POST Screen

1. **BIOS** information
2. CPU type
3. Memory status
4. Enter **Setup** prompt appears only during **POST**

Note: The **POST** screen as pictured right is for guideline purposes only. The **POST** screen on your computer may appear slightly different. If you disable the **Boot-time Diagnostic Screen**, the POST screen will not appear.

The Power-On Self Test (POST)

Each time you turn on the computer, the system takes a few seconds to conduct a **POST**, including a quick test of the on-board RAM (memory).

As the **POST** proceeds, the computer will tell you if there is anything wrong. If there is a problem that prevents the system from booting, it will display a system summary and prompt you to run ***Setup***.

If there are no problems, the ***Setup*** prompt will disappear and the system will load the operating system. Once that starts, you can't get into ***Setup*** without rebooting.

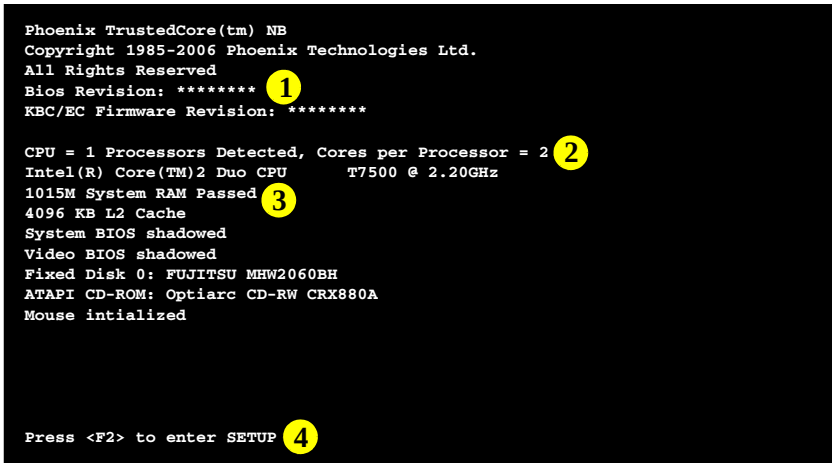


Figure 5 - 1
POST Screen

Failing the POST

Errors can be detected during the **POST**. There are two categories, “fatal” and “non-fatal”.

Fatal Errors

These stop the boot process and usually indicate there is something seriously wrong with your system. Take the computer to your service representative or authorized service center as soon as possible.

Non-Fatal Errors

This kind of error still allows you to boot. You will get a message identifying the problem (make a note of this message!) followed by the prompt:

- Press <F1> to resume
- <F2> to enter Setup

Press **F1** to see if the boot process can continue. It may work, without the correct configuration.

Press **F2** to run the **Setup** program and try to correct the problem. If you still get an error message after you change the setting, or if the “cure” seems even worse, call for help.

The Setup Program

The **Phoenix Setup** program tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration).

Entering Setup

To enter ***Setup***, turn on the computer and press **F2** during the **POST**. The prompt (***Press F2 to Enter Setup***) seen on page *5 - 2* is usually present for a few seconds after you turn on the system. If you get a "Keyboard Error", (usually because you pressed **F2** too quickly) just press **F2** again.

If the computer is already on, reboot using the **Ctrl + Alt + Delete** combination and then hold down **F2** when prompted. The ***Setup*** main menu will appear.

Setup Screens

The following pages contain additional advice on **portions** of the ***Setup***.

Along the top of the screen is a menu bar with menu headings. When you select a heading, a new screen appears. Scroll through the features listed on each screen to make changes to ***Setup***.

Instructions on how to navigate each screen are in the box along the bottom of the screen. If these tools are confusing, press **F1** to call up a **General Help** screen, and then use the arrow keys to scroll up or down the page.

The **Item Specific Help** on the right side of each screen explains the highlighted item and has useful messages about its options.

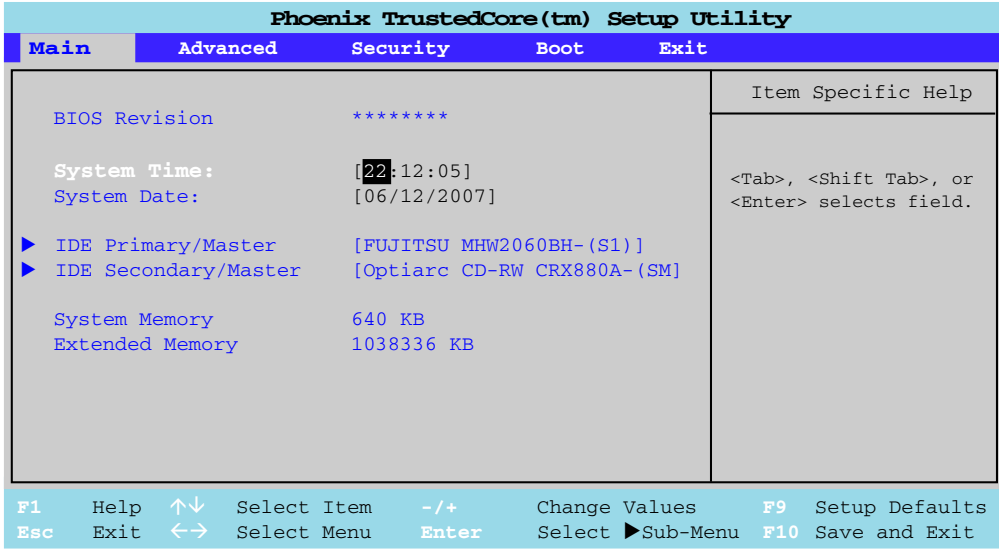
If you see an arrow ▶ next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

Setup Menus

The **Setup** menus shown in this section are for **reference** only. Your computer's menus will indicate the configuration appropriate for your model and options.

Main Menu

Figure 5 - 2
Main Menu



System Time & Date (Main Menu)
The hour setting uses the 24-hour system (i.e., ØØ = midnight; 13 = 1 pm). If you can change the date and time settings in your operating system, you will also change these settings. Some applications may also alter data files to reflect these changes.

IDE Primary/Master (Main Menu)
Pressing **Enter** opens the sub-menu to show the configuration of a HDD on the computer's IDE Primary/Master Channel. Use the ***Auto*** (Type:) setting to have the items configured automatically for you.

IDE Secondary/Master (Main Menu)
Pressing **Enter** opens the sub-menu to show the configuration of an optical Device on the computer's IDE Channel 1. Use the ***Auto*** (Type:) setting to have the items configured automatically for you.

System/Extended Memory: (Main Menu)
This item contains information on the system memory, and is not user configurable. The system will auto detect the amount of memory installed.

Intel Turbo Memory

Intel Turbo Memory Technology is supported in ***Windows Vista*** ONLY (do not enable this option in ***Windows XP***).

Advanced Menu

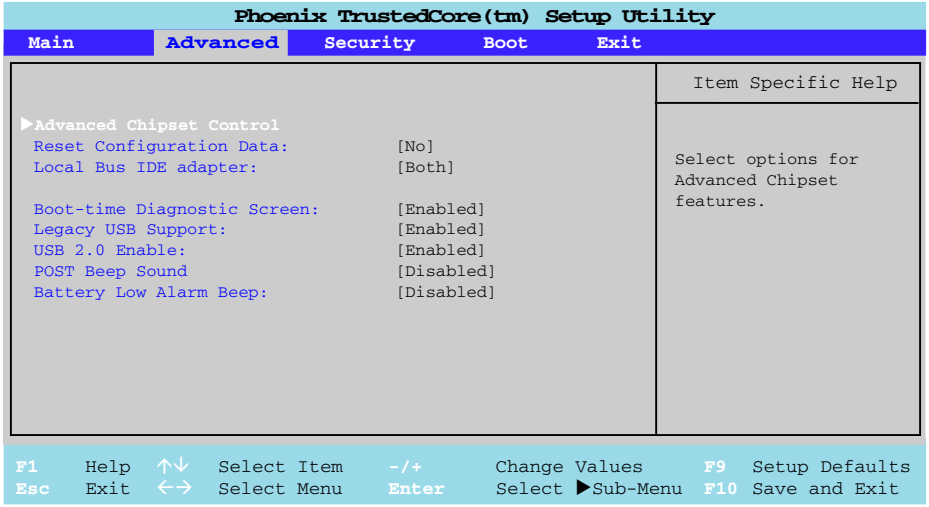

Phoenix TrustedCore(tm) Setup Utility
Main
Advanced
Security
Boot
Exit
Item Specific Help
▶Advanced Chipset Control
Reset Configuration Data: [No]
Local Bus IDE adapter: [Both]
Boot-time Diagnostic Screen: [Enabled]
Legacy USB Support: [Enabled]
USB 2.0 Enable: [Enabled]
POST Beep Sound [Disabled]
Battery Low Alarm Beep: [Disabled]
Select options for Advanced Chipset features.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶Sub-Menu F10 Save and Exit

Figure 5 - 3
Advanced Menu

Advanced Chipset Control > Intel Robson: (Advanced Menu)
The sub-menu here allows you to enable/disable support for ***Intel Turbo Memory1***, if you have included an **Intel Turbo Memory** module in your purchase option. You will need to enable this option BEFORE installing the operating system software. (do not enable this option in *Windows XP* or on a *Windows Vista* operating system that has been installed without the option enabled). See ***"Intel Turbo Memory Module" on page 7 - 48*** for more details.

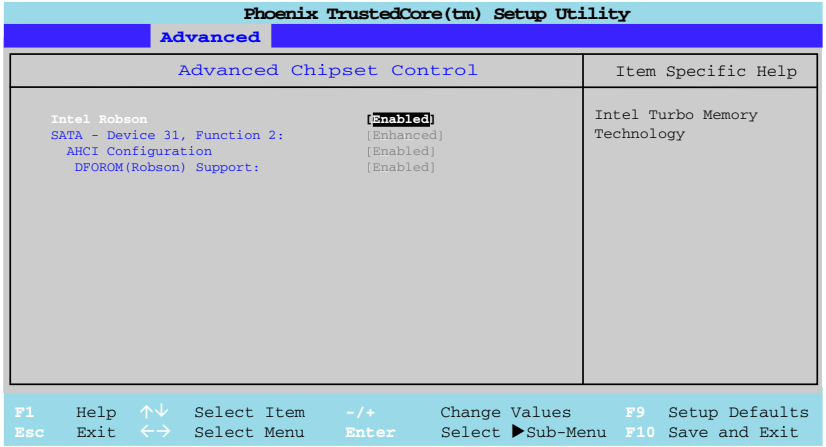

Phoenix TrustedCore(tm) Setup Utility
Advanced
Advanced Chipset Control
Item Specific Help
Intel Robson [Enabled]
SATA - Device 31, Function 2: [Enhanced]
AHCI Configuration [Enabled]
DFOROM(Robson) Support: [Enabled]
Intel Turbo Memory Technology
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶Sub-Menu F10 Save and Exit

Figure 5 - 4
Advanced Chipset Control Menu

Reset Configuration Data: (Advanced Menu)
This item is set to **No** as default. You can change the setting to **Yes** if you have installed a new add-on which has reconfigured the system, resulting in such a serious system conflict that the operating system is unable to boot.

Local Bus IDE adapter: (Advanced Menu)
This item allows you to configure the IDE bus which controls the hard disk and optical devices. It is set to "***Both***" by default.

Boot-time Diagnostic Screen: (Advanced Menu)
Use this menu item to enable/disable the Boot-time Diagnostic Screen.

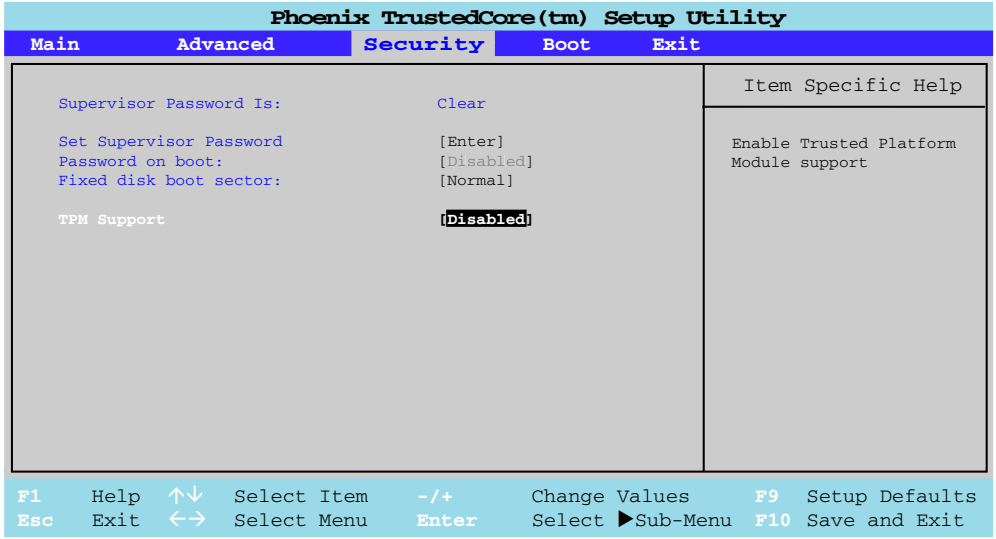
Legacy USB Support: (Advanced Menu)
Use this menu item to enable/disable the support for Legacy Universal Serial Bus.

USB 2.0 Enable:
This menu item can be used to enable/disable support for USB 2.0.

POST Beep Sound (Advanced Menu)
Use this menu item to enable/disable the beep as the computer starts up.

Battery Low Alarm Beep: (Advanced Menu)
Use this menu item to enable/disable the battery low alarm beep.

Security Menu



Set Supervisor Password (Security Menu)

You can set a password for access to the **Phoenix TrustedCore Setup Utility**. This will not affect access to the computer OS, (only the **Phoenix TrustedCore Setup Utility**).

Security Menu

The changes you make here affect the access to the **Setup** utility itself, and also access to your machine as it boots up after you turn it on. These settings do not affect your machine or network passwords which will be set in your software OS.

Figure 5 - 5
Security Menu

5

Password Warning

If you set a boot password (Password on boot is "Enabled"), **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

TPM Password

Note that you should set a supervisor password in the BIOS to protect the **TPM information** from being tampered with by unauthorized users.

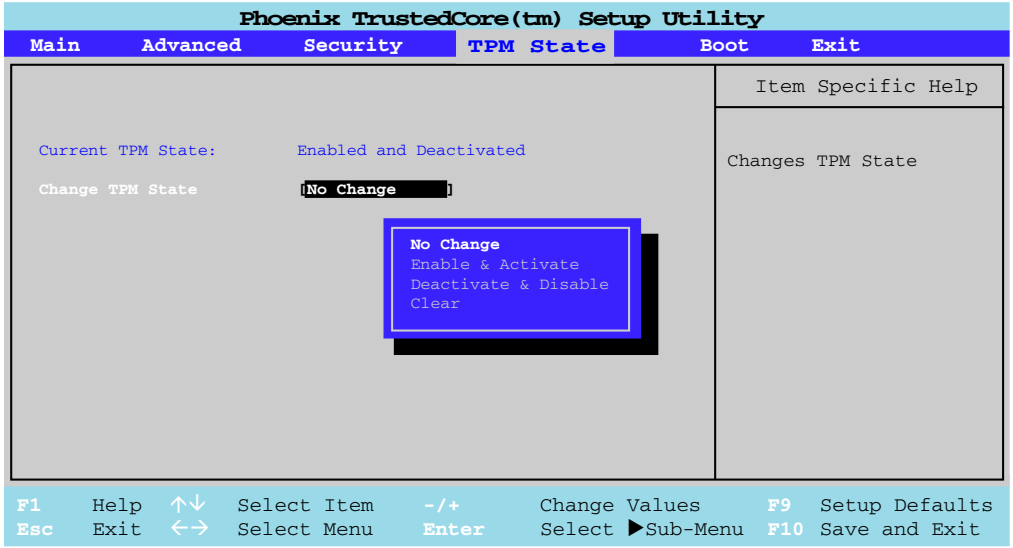
Password on boot: (Security Menu)
Specify whether or not a password should be entered to boot the computer (**you may only set a password on boot if a supervisor password is enabled**). If "***Enabled***" is selected, only users who enter a correct password can boot the system (**see the warning in the sidebar**). The default setting is "***Disabled***".

Note: To clear existing passwords press **Enter** and type the existing password, then press **Enter** for the new password (without typing any password entry) and **Enter** again to confirm the password clearance.

Fixed disk boot sector: (Security Menu)
If you choose "**Write-Protect**" this will protect against viruses being written to the hard disk boot sector (this is not a substitute for installing an anti-virus program - see ***"Viruses" on page 8 - 4***).

TPM Support (Security Menu)
Enable **TPM Support** from this menu, and the **TPM State** menu will then appear (see ***"TPM State" on page 5 - 13***). **Note**: If you disable TPM Support then your TPM information may be erased altogether. You should only disable TPM support when you need to clear the TPM information. The default setting is "***Disabled***".

TPM State



Change TPM State (TPM State)

This menu allows you to set the level of TPM functionality. You can enable/disable the TPM function altogether, or clear all existing TPM information.

Note: If you clear all TPM information it will be erased altogether and the information will need to be reconfigured.

TPM State Menu

To access this menu you must first enable TPM support from the security menu (see page *5 - 12*).

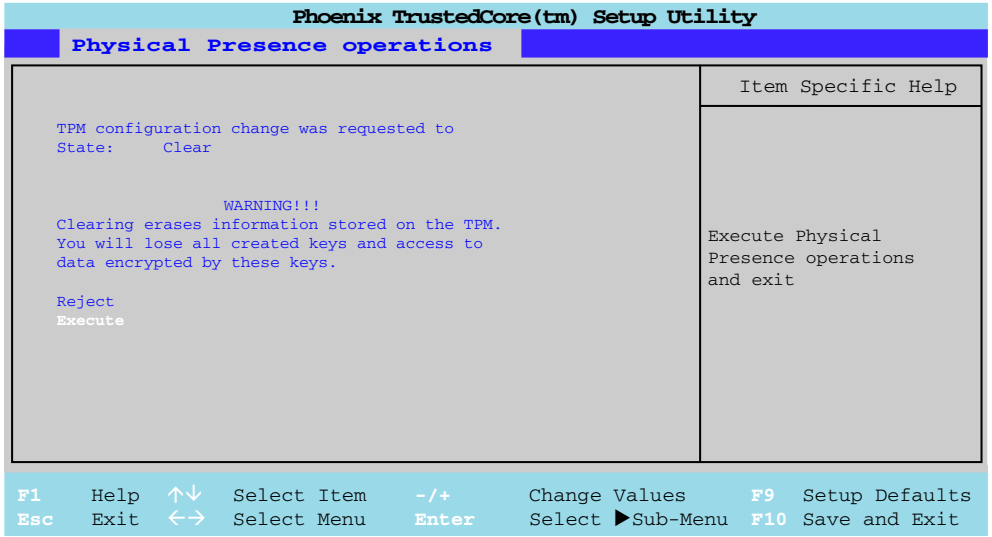
Password Protection

Note that you should set a supervisor password in the BIOS to protect the TPM information from being tampered with by unauthorized users.

Figure 5 - 6
TPM State

If you have made any changes to the TPM State you will be asked to execute or reject the changes made after you have saved and exited the BIOS. Highlight the required option (it will be white), and then press Enter to save it.

Figure 5 - 7
Physical Presence Operations


Phoenix TrustedCore(tm) Setup Utility
Physical Presence operations
Item Specific Help
TPM configuration change was requested to
State: Clear
WARNING!!!
Clearing erases information stored on the TPM.
You will lose all created keys and access to
data encrypted by these keys.
Reject
Execute
Execute Physical Presence operations and exit
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶Sub-Menu F10 Save and Exit

Boot Menu

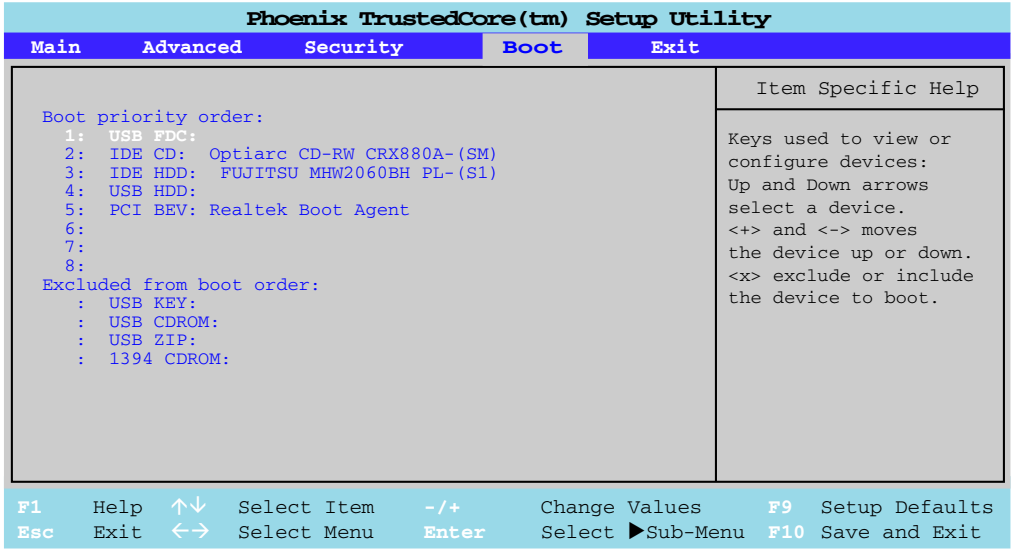
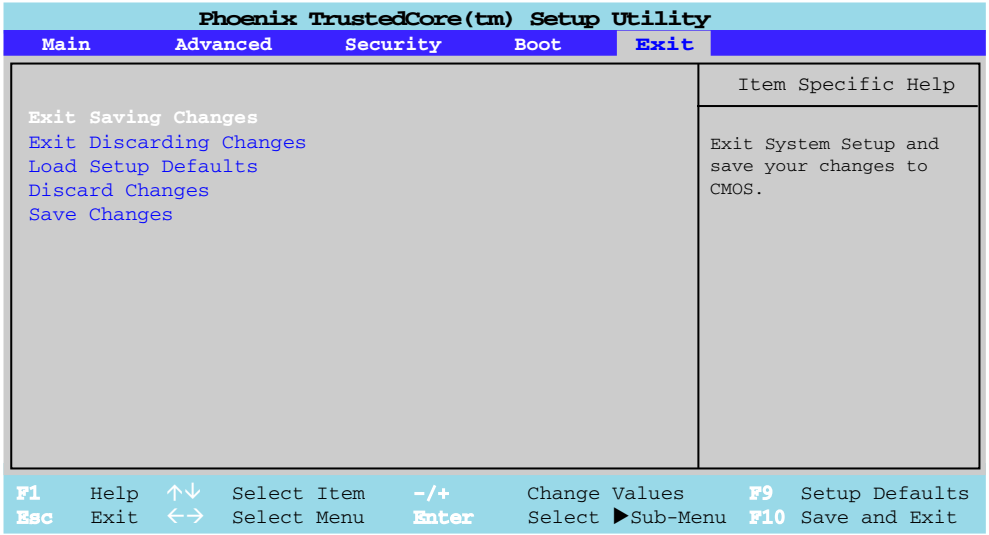

Phoenix TrustedCore(tm) Setup Utility
Main
Advanced
Security
Boot
Exit
Boot priority order:
1: USB FDC:
2: IDE CD: Optiarc CD-RW CRX880A-(SM)
3: IDE HDD: FUJITSU MHW2060BH PL-(S1)
4: USB HDD:
5: PCI BEV: Realtek Boot Agent
6:
7:
8:
Excluded from boot order:
: USB KEY:
: USB CDROM:
: USB ZIP:
: 1394 CDROM:
Item Specific Help
Keys used to view or configure devices:
Up and Down arrows select a device.
<+> and <-> moves the device up or down.
<x> exclude or include the device to boot.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶Sub-Menu F10 Save and Exit

Figure 5 - 8
Boot Menu

When you turn the computer on it will look for an operating system (e.g. ***Windows Vista***) from the devices listed in this menu, and **in this priority order**. If it cannot find the operating system on that device, it will try to load it from the next device in the order specified in the **Boot priority order**. Item specific help on the right is available to help you move devices up and down the order.

Exit Menu

Figure 5 - 9
Exit Menu



Choosing to ***Discard Changes***, or ***Exit Discarding Changes***, will wipe out any changes you have made to the ***Setup***. You can also choose to restore the original ***Setup*** defaults that will return the ***Setup*** to its original state, and erase any previous changes you have made in a previous session.

Chapter 6: Upgrading The Computer

Overview

This chapter contains information on upgrading the computer. Follow the steps outlined to make the desired upgrades. If you have any trouble or problems you can contact your service representative for further help. Before you begin you will need:

- A small crosshead or Phillips screwdriver
- A small regular slotted (flathead) screwdriver
- An antistatic wrist strap

Before working with the internal components you will need to wear an antistatic wrist strap to ground yourself because static electricity may damage the components.

Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.

The chapter includes:

- Removing the Battery
- Upgrading the Hard Disk Drive
- Upgrading the Optical (CD/DVD) Device
- Upgrading the System Memory (RAM)

Please make sure that you review each procedure before you perform it.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

When Not to Upgrade

These procedures involve opening the system's case, adding and sometimes replacing parts.

You should **not** perform any of these upgrades if:

- Your system is still under warranty or a service contract
- You don't have all the necessary equipment
- You're not in the correct environment
- You doubt your abilities

Under any of these conditions, contact your service representative to purchase or replace the component(s).

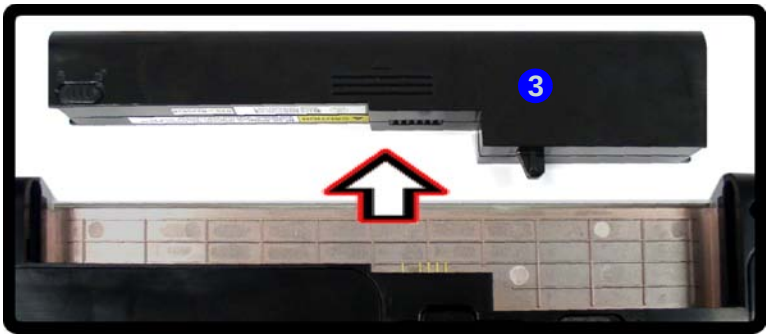
Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before turning the computer on.

Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

1. Turn the computer **off**, and turn it over.
2. Slide the latch 1 in the direction of the arrow.
3. Slide the latch 2 in the direction of the arrow, and hold it in place.
4. Slide the battery out in the direction of the arrow 3.



Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.

Figure 6 - 1
Battery Removal

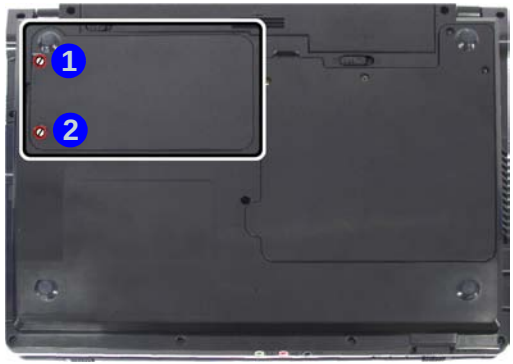
HDD System Warning

New HDD's are blank. Before you begin make sure:
You have backed up any data you want to keep from your old HDD.
You have all the CD-ROMs and FDDs required to install your operating system and programs.
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

Upgrading the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h) (see *"Storage" on page C - 3*). Follow your operating system's installation instructions, and install all necessary drivers and utilities (see *"Driver Installation" on page 4 - 2*), when setting up a new hard disk.

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the hard disk bay cover and loosen screws 1 & 2.
3. Remove the hard disk bay cover 3.
4. Grip the tab and slide the hard disk in the direction of arrow 4.



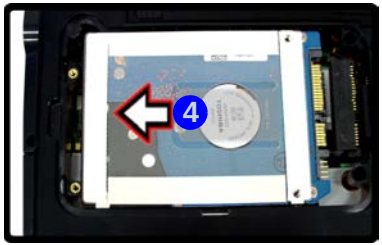
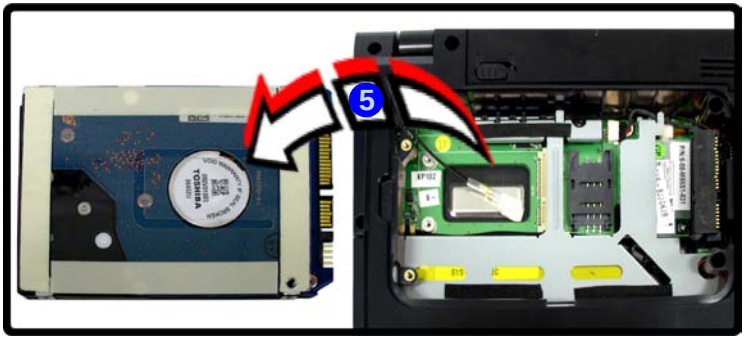


Figure 6 - 2
Hard Disk Bay & Screws

5. Lift the hard disk up in the direction of arrow 5.
6. Remove the screws 6 & 7 and cover 8.
7. Reverse the process to install a new hard disk drive.



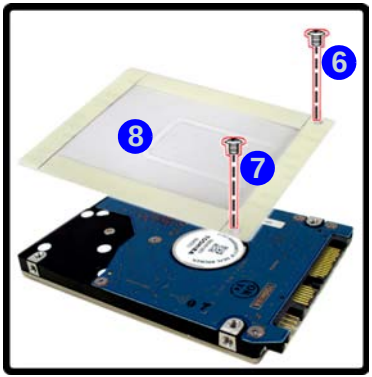


Figure 6 - 3
HDD & Cover Removal

Upgrading the Optical (CD/DVD) Device

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the RAM & CPU bay cover and remove screws 1 - 4.
3. Remove the screw at point 5, and use a screwdriver to carefully push out the optical device at point 5.
4. Reverse the process to install the new device.

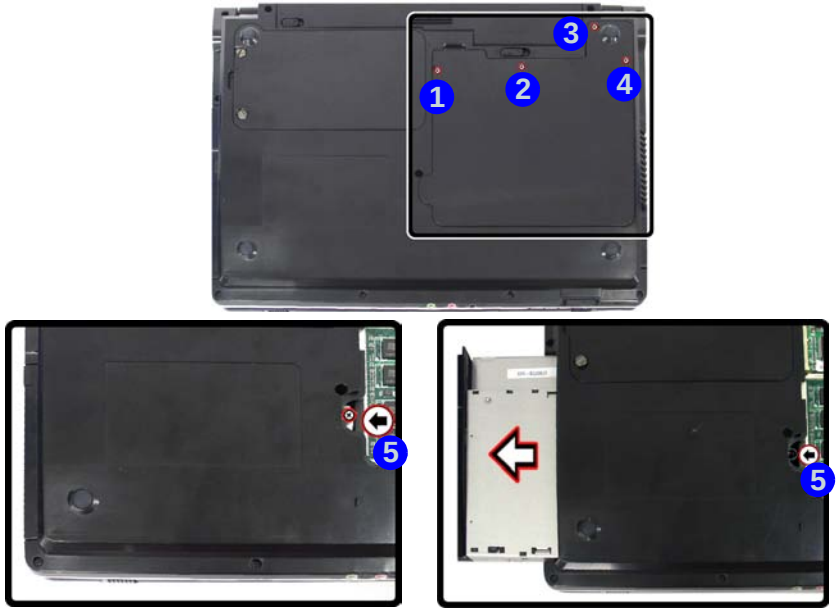


Figure 6 - 4
Removing the CD/ DVD Device

Upgrading the System Memory (RAM)

The computer has **two** memory sockets for 200 pin Small Outline Dual In-line (SO-DIMM) **DDRII (DDR2)** type memory modules (see *"Memory" on page C - 2* for details of supported module types).

The total memory size is automatically detected by the POST routine once you turn on your computer.

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the RAM & CPU bay cover and remove screws 1 - 4.

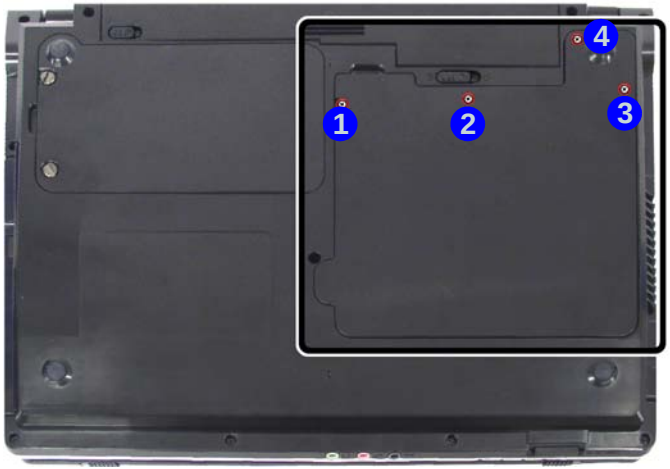
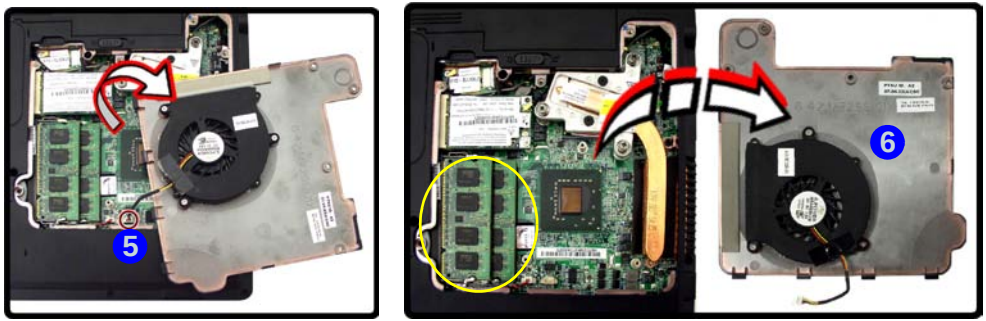


Figure 6 - 5
RAM & CPU Bay Screws

3. Carefully (a fan and cable are attached to the under side of the cover) lift up the bay cover.
4. Carefully disconnect the fan cable (5), and remove the cover (6).

Figure 6 - 6
CPU/RAM Bay Cover Removed



Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

5. Gently pull the two release latches on the sides of the memory socket in the direction indicated by the arrows (7 & 8) in ***Figure 6 - 7***.

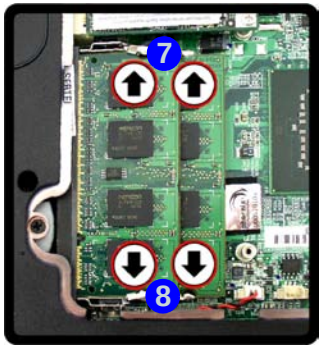


Figure 6 - 7
RAM Module Release Latches

6. The RAM module will 9 pop-up, and you can remove it.

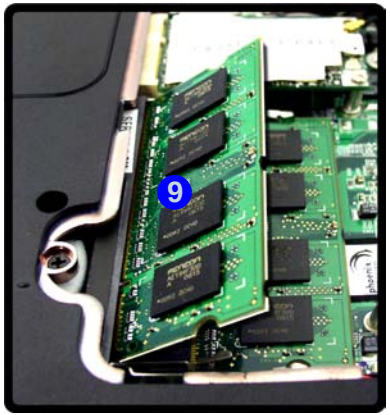


Figure 6 - 8
RAM Module Removal

7. Pull the latches to release the second module if necessary.
8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the bay cover and screws (**make sure you reconnect the fan cable before screwing down the bay cover - see *Figure 6 - 6 on page 6 - 8***).
12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Unauthorized tampering with the HDD may also violate your warranty.

Upgrading the Processor

If you want to upgrade your computer by replacing the existing processor with a faster/new one you will need to contact your customer service representative. We recommend that you do not do this yourself, since if it is done incorrectly you may damage the processor or mainboard.

Chapter 7: Modules & Options

Overview

This chapter contains information on the following modules, which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

- PC Camera Module
- Wireless LAN Module
- Bluetooth Module
- 3.5G Module
- Fingerprint Reader Module
- Trusted Platform Module
- Intel Turbo Memory Module

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are **OFF** if you are using the computer aboard aircraft.

Important Notice

If your purchase option includes both **Wireless LAN** and **3.5G** modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.

Latest PC Camera Driver Information

Check the **CD**, and any accompanying insert pages, for the latest updated information on the PC Camera driver, which may override the information provided here.

PC Camera Module

There are **3** camera options available for this computer, depending on your purchase configuration. The **1.3M pixel camera** module has both **UVC** (USB Video Class) and **non UVC** options, and uses the **BisonCap** application to capture video files. The **2.0M pixel camera** module uses the **Video View** application to capture video files.

Before installing the **PC Camera** driver, make sure that the optional PC Camera is on. **Use the Fn + F10 key combination** (see *Table 1 - 5, on page 1 - 10*) **to toggle power to the PC Camera module**. Make sure you install the drivers in the order indicated in *Table , on page 4 - 3*.

PC Camera Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **1.PC Camera, Web cam > Yes**.

For the 1.3M Pixel Camera Module (UVC and **non UVC):**

1. Choose the language you prefer and click **Next > Next**.
2. Click **Finish** to restart the computer.
3. Run the **BisonCap** application program from the **BisonCam** shortcut on the desktop, or from the **BisonCam** item in the **Start > Programs/All Programs** menu (if the hardware is turned off use the **Fn + F10** key combination to turn it on again).

For the 2.0M Pixel Camera Module:

1. Click **Install**.
2. Click to select **Yes** or **No** in answer to the power system question.
3. Click to select **Yes** or **No** to enable/disable the **Digital Zoom** function.
4. Click **Finish > Finish** to restart the computer.
5. Run the **Video View** application program from the **Video View** shortcut on the desktop, or from the **USB2.0 PC Camera** item in the **Start > Programs/All Programs** menu (if the hardware is turned off use the **Fn + F10** key combination to turn it on again).

2.0M PC Camera Screen Refresh

The 2.0M PC Camera module supports a frame rate of 12 fps. If you find that the screen refresh rate is subject to lag or stuttering, then **reduce the window size**, or adjust the **Output Size** and/or **Color Space Compression**.

To reduce **Output Size** and/or **Color Space Compression** run the **Video View** application, click **Options** and select **Video Capture Pin**. Adjust the settings from the appropriate pull-down menu.

PC Camera Audio Setup (all camera modules)

If you wish to capture video & **audio** with your camera, it is necessary to setup the audio recording options in ***Windows***.

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Sound** (**Hardware and Sound**).
3. Click **Recording** (tab).
4. Right-click **Microphone** (Realtek High Definition Audio) and make sure the item is not disabled.
5. Double-click **Microphone** (or select **Properties** from the right-click menu).
6. Click **Levels** (tab), and adjust the **Microphone** and **Microphone Boost** sliders to the level required.
7. Click **OK** and close the control panels.
8. Run the **BisonCap/Video View** application program from the **Start > Programs/ All Programs > BisonCam/USB2.0 PC Camera** menu.
9. Go to the **Devices** menu heading and select **Microphone** (**Realtek....**) (it should have a tick alongside it).
10. Go to the **Capture** menu heading and select **Capture Audio** (it should have a tick alongside it).

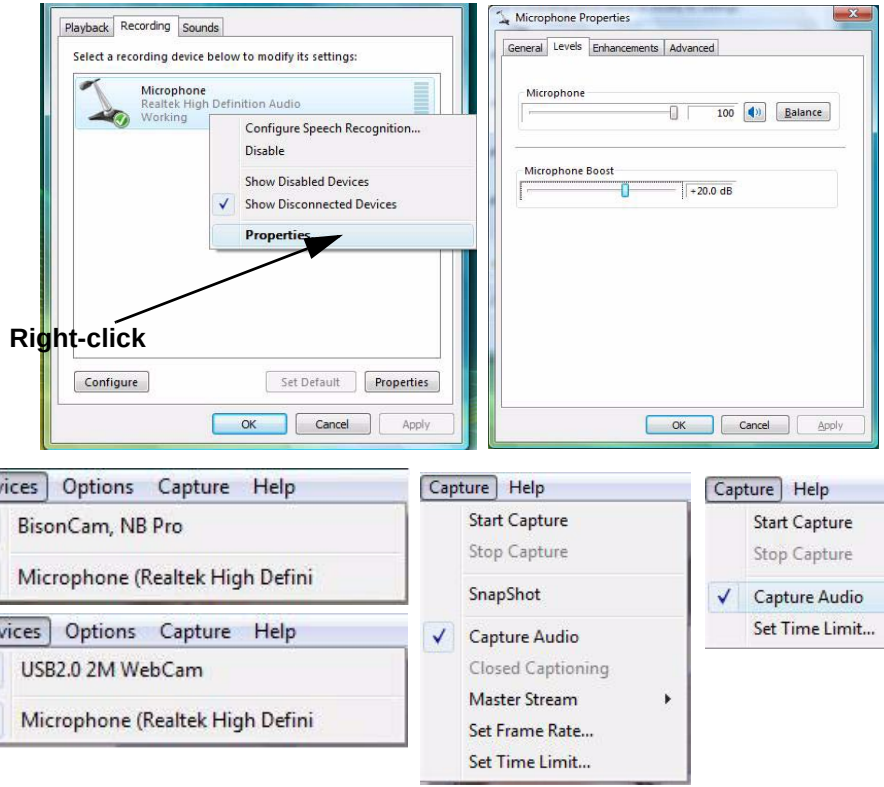


Figure 7 - 1
Audio Setup for PC Camera

Pre-Allocating File Space

You may pre-allocate the file size for the capture file in the **BisonCap** program. You can choose to ignore this by clicking **Cancel**.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

BisonCap (for 1.3M pixel camera module)

BisonCap is a video viewer useful for general purpose video viewing and testing, and can capture video files to .avi format.

1. Run the **BisonCap** program from the **Start > Programs/All Programs > Bison-Cam** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check ***"PC Camera Audio Setup (all camera modules)" on page 7 - 4***) and select **Start Capture**.
3. On the first run of the program (if you have not set the captured file) you will be asked to choose a file name and size (**see the sidebar - Pre-Allocating File Space**) for the captured file. Click **Start Capture** again.
4. Click **OK** to start capturing the video, and press **Esc** to stop the capture.
5. If you wish to, you may go to the **File** menu and select **Save Captured Video As...**, choose a file name and location, and then click **Open** (you can view the file using the **Windows Media Player**).

Set Capture File

In the **BisonCap** program you will only be asked to set the capture file name on the first run of the program. When you run the program the next time the file will automatically be overwritten with the newly captured file. To avoid overwriting files you can go to the **Set Capture File..** option in the **File** menu, and set the file name and location before capture. Set the name and location then click **Open** (you can choose **Cancel** to ignore the file size if prompted).

Eliminating Screen Flicker (BisonCap)

If you find that the video screen in the **BisonCap** program is flickering, you can try to adjust the setting in the **Video Capture Filter** options.

1. Run the **BisonCap** program.
2. Go to **Options** and scroll down to select **Video Capture Filter...**.
3. Click either **50Hz** or **60Hz** under **Frequency** in **Property Page** (tab).

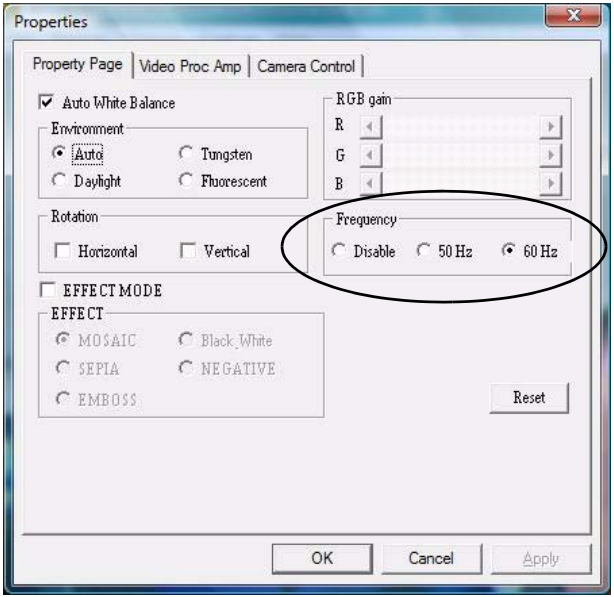


Figure 7 - 2
Video Capture Filter

Pre-Allocating File Space

You may pre-allocate the file size for the capture file in the **Video View** program.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

Video View (for 2.0M pixel camera module)

Video View is a video viewer useful for general purpose video viewing and testing, and can capture video files to .avi format.

1. Run the **Video View** program from the **Start > Programs/All Programs > USB2.0 PC Camera** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check ***"PC Camera Audio Setup (all camera modules)" on page 7 - 4***) and select **Start Capture**.
3. Click **OK** (the file location will be displayed in the pop-up box) to start capturing the video, and press **Esc** to stop the capture.

Set Capture File

Prior to capturing video files you may **Set Capture File..**. To avoid overwriting files you can go to the **Set Capture File..** option in the **File** menu, and set the file name and location before capture. Set the name and location then click **Open** (you can choose **Cancel** to ignore the file size if prompted).

Eliminating Screen Flicker (Video View)

If you find that the video screen in the **Video View** program is flickering, you can try to adjust the setting in the **Video Capture Filter** options.

1. Run the **Video View** program.
2. Go to **Options** and scroll down to select **Video Capture Filter...**.
3. Click either **50Hz** or **60Hz** under **Flickering Reduction** in **Image** (tab).

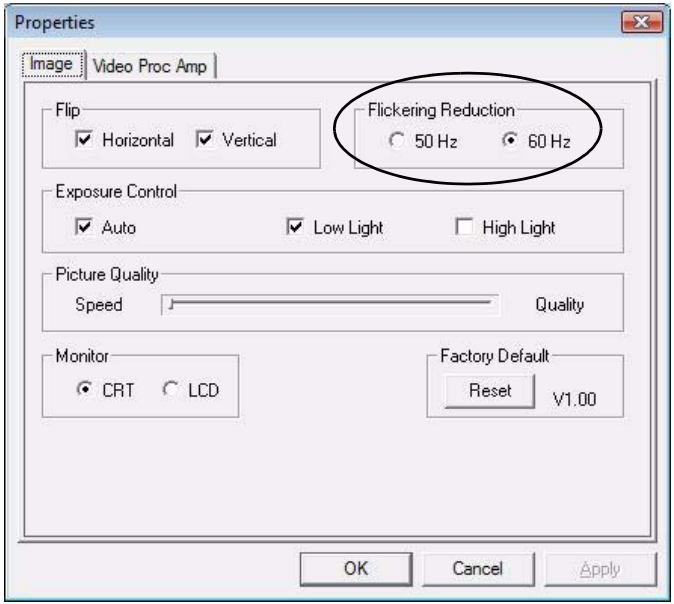


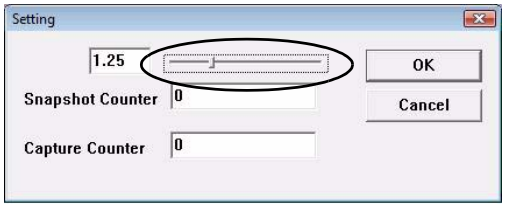
Figure 7 - 3
Video Capture Filter

Zoom (Video View)

If you have enabled digital zoom when installing the **2.0M Pixel Camera** driver you may use the **Options** > **Setting** menu to zoom the camera in and out.

1. Run the **Video View** program.
2. Go to **Options** and scroll down to select **Setting**.
3. Use the slider to adjust the zoom level, and click **OK** to save the setting.

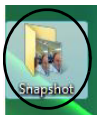
Figure 7 - 4
Setting



Still Image Capture (Video View)

You can capture still images by using the **Snapshot** command from the **Capture** menu.

1. Run the **Video View** program.
2. Go to **Capture** and select **Snapshot**.
3. The picture (in JPEG format) will be placed in the **Snapshot** folder on the desktop.



Snapshot Folder

The Snapshot folder's default location is on the desktop. Do not move this folder or an error may appear when you try to take a still picture.

If you accidentally delete or move the folder, you can create a new Snapshot folder on the desktop in order to capture the files.

Figure 7 - 5
Snapshot Folder

Wireless LAN Module

If you have included an **Intel PRO/Wireless 3945ABG (802.11a/b/g)**, **Intel PRO/Wireless 4965AGN (802.11a/g/n) PCIe** or **Realtek RTL8187 WLAN module** in your purchase option, make sure that the Wireless LAN module is on before installing the driver.

Use the **Fn + F11 key combination** (see *"Function/Hot Key Indicators" on page 1 - 10*) **to toggle power to the Wireless LAN module**. Make sure you install the drivers in the order indicated in *Table , on page 4 - 3*.

Intel WLAN Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Wireless Lan > Yes**.
4. Click **Install Software**.
5. Click the button to accept the license and click **Next**.
6. Click **Next > OK**.

Note: The operating system is the default setting for Wireless LAN control in ***Windows Vista*** (see page *7 - 13*).

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are OFF if you are using the computer aboard aircraft.

Use the **Fn + F11** key combination to toggle power to the WLAN module, and check the indicator to see if the module is powered on or not (see *Table 1 - 5, on page 1 - 10*/ *Table 1 - 3, on page 1 - 7*).

Realtek RTL 8187 Driver Installation

1. Make sure the module is powered on, then insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Wireless Lan > Yes**.
4. Choose the language you prefer and click **Next**.
5. Click **Finish** to complete the installation.

Note: The operating system is the default setting for Wireless LAN control in ***Windows Vista*** (see overleaf).

Connecting to a Wireless Network

Make sure the Wireless LAN module is turned on.

1. **Click** the taskbar wireless icon, and then click **Connect to a network** (or **right-click** the icon, and then click **Connect to a network**).

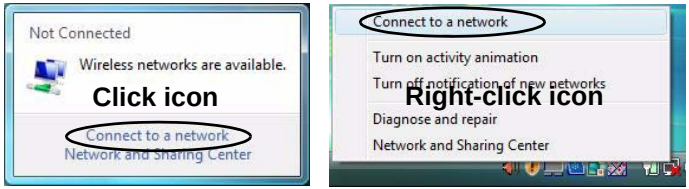


Figure 7 - 6
Taskbar Menus

2. In the **Show** list, click to choose **Wireless** from the drop-down menu.
3. A list of currently available networks will appear.

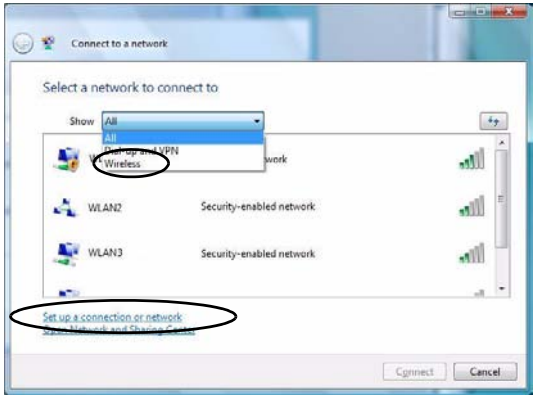


Figure 7 - 7
Connect to a Network

Network and Sharing Center

You can also use the **Network and Sharing Center** control panel in Windows (**Network and Internet**) to connect to any available wireless networks.

4. Click a network, and then click **Connect**.
5. If you do not see a network you want to connect to, click **Set up a connection or network** (a list of options will appear allowing manual searching, and creating a new network).

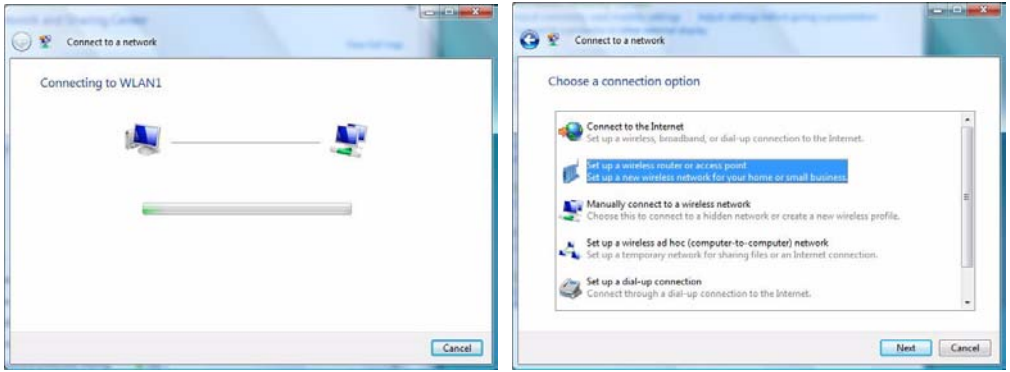

Connect to a network
Connecting to WLAN1
Cancel
Connect to a network
Choose a connection option
Connect to the Internet
Set up a wireless, broadband, or dial-up connection to the Internet.
Set up a wireless router or access point
Set up a new wireless network for your home or small business
Manually connect to a wireless network
Choose this to connect to a hidden network or create a new wireless profile.
Set up a wireless ad hoc (computer-to-computer) network
Set up a temporary network for sharing files or an Internet connection.
Set up a dial-up connection
Connect through a dial-up connection to the Internet.
Next
Cancel

Figure 7 - 8
Connecting

6. Move the cursor over the taskbar icon to see the connection status (see below).

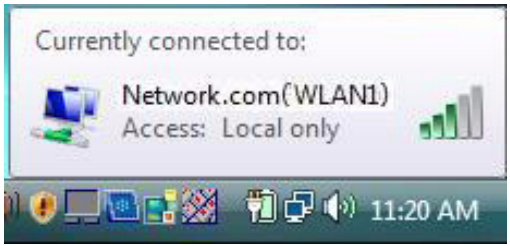


Figure 7 - 9
Connection Status

7. To disconnect from the wireless network you can click the taskbar wireless icon, and then select **Connect or disconnect** to access the network menu, and click Disconnect (or **right-click** the icon, and then click **Disconnect from**).

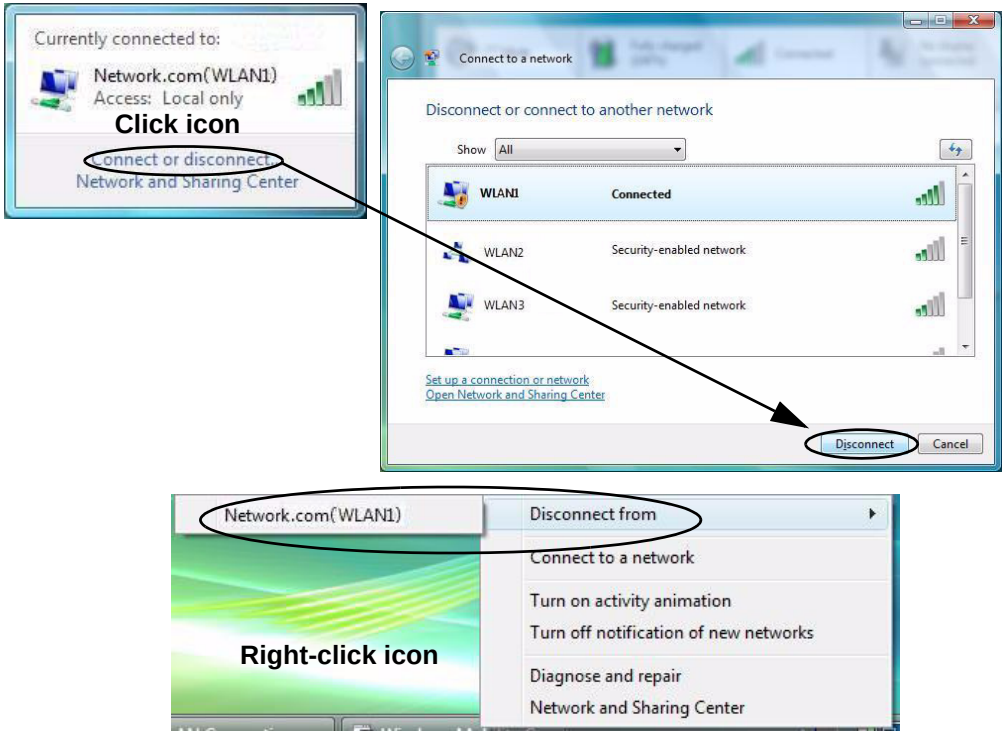


Figure 7 - 10
Disconnecting

Security Enabled Networks

You should try to make sure that any network you are connecting to is a secure network.

Connecting to unsecure networks may allow unauthorized access to your computer, documents, websites and files etc.

Windows Mobility Center

The **Windows Mobility Center** control panel provides an easy point of access for information on battery status, power plans used and wireless device status etc.

To access the Windows Mobility Center:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Double-click **Windows Mobility Center** (**Mobile PC**).
3. Click the button to **Turn wireless off/on**, or click the icon to access the network menu.

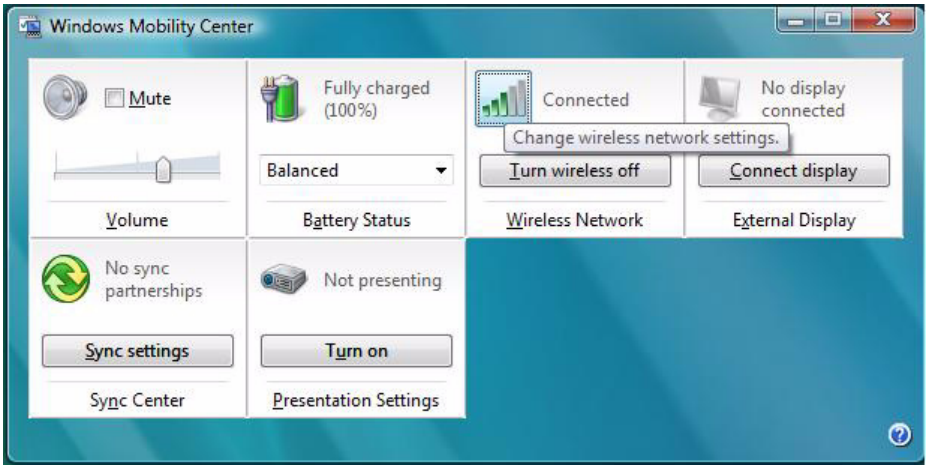


Figure 7 - 11
Windows Mobility Center

Bluetooth Module

Before installing the **Bluetooth** driver, make sure that the **optional** Bluetooth module is on. **Use the Fn + F12 key combination** (see ***"Function/Hot Key Indicators" on page 1 - 10***) **to toggle power to the Bluetooth module**. Make sure you install the drivers in the order indicated in ***Table , on page 4 - 3***.

Bluetooth Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **3.Bluetooth > Yes**.
4. Choose the language you prefer, and click **OK** > **Next**.
5. Click the button to accept the license agreement, and then click **Next**.
6. Click **Next > Install**.
7. Click **Finish**, and the **BlueSoleil** icon will appear on the desktop.
8. You can configure the settings at any time by going to the **IVT Corporation BlueSoleil - Main Window** (**Start** > **Programs/All Programs** > **IVT BlueSoleil > BlueSoleil**), or by clicking the desktop icon .

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are OFF if you are using the computer aboard aircraft.

Use the **Fn + F12** key combination to toggle power to the Bluetooth module, and check the indicator to see if the module is powered on or not (see ***Table 1 - 5, on page 1 - 10*** / ***Table 1 - 3, on page 1 - 7***).

User Guides & Help

View the BlueSoleil User Guides from the **Help** Menu (or press the **F1** key) in the **IVT Corporation BlueSoleil - Main Window** control panel.

Click the **Help** menu and select **Contents and Index**.

Look through **Getting Started** or select the appropriate **User Guide** from the **Contents** menu.

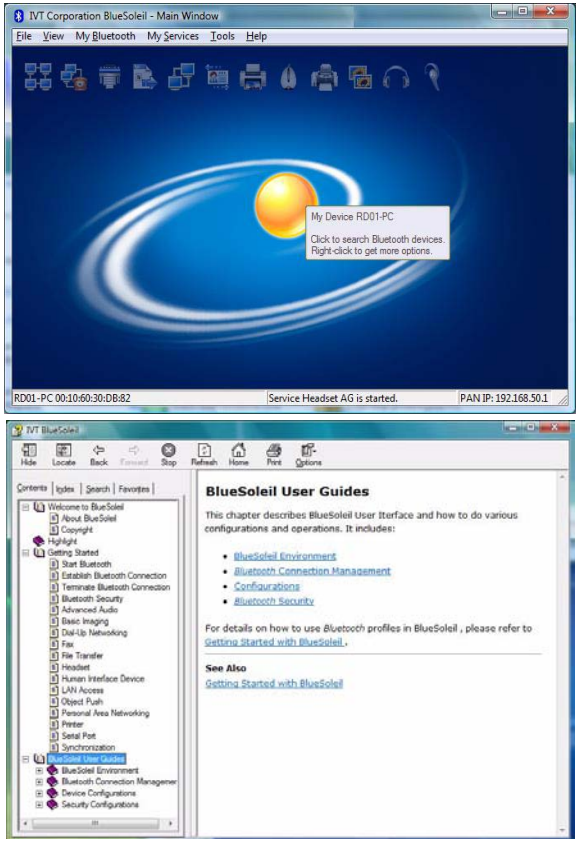
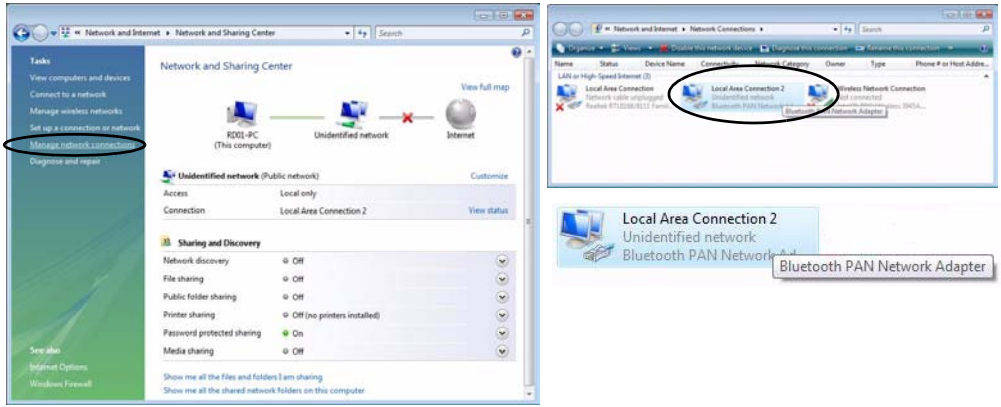

IVT Corporation BlueSoleil - Main Window
File View My Bluetooth My Services Tools Help
My Device RD01-PC
Click to search Bluetooth devices.
Right-click to get more options.
RD01-PC 00:10:60:30:DB:82
Service Headset AG is started.
PAN IP: 192.168.50.1
BlueSoleil User Guides
This chapter describes BlueSoleil User Iterface and how to do various configurations and operations. It includes:
BlueSoleil Environment
Bluetooth Connection Management
Configurations
Bluetooth Security
For details on how to use Bluetooth profiles in BlueSoleil , please refer to Getting Started with BlueSoleil .
See Also
Getting Started with BlueSoleil

Figure 7 - 12
BlueSoleil Main Window & Help

Bluetooth Local Area Connection

You can check the Bluetooth connection status from the **Network and Sharing Center**:

1. Use the **Fn + F12** key combination to turn on the Bluetooth module.
2. Run the **IVT Corporation BlueSoleil** program from the desktop icon or **Start** menu.
3. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
4. Double-click **Network and Sharing Center** (**Network and Internet**).
5. Click **Manage network connections**.
6. The Bluetooth connection status will then be displayed in the control panel.



7. To **disconnect** click **File** from the **IVT Corporation BlueSoleil - Main Window**, and select **Exit** (the Local Area Connection will then display "**Network cable unplugged**").

Disconnecting

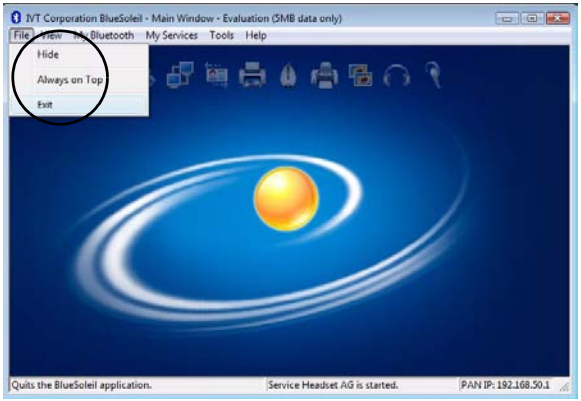
In order to have the Local Area Connection icon display the correct connection status, you will need to exit the **IVT Corporation BlueSoleil - Main Window** by clicking the **File** menu and selecting **Exit** (see over).

After exiting the program you can then use the **Fn + F12** key combination to turn off the Bluetooth module.

If you use the close button, or turn off the Bluetooth module (by using the **Fn + F12**) the icon will not display the correct status

Figure 7 - 13
Local Area Connection

8. Do not use the **close** button or **Fn + F12** key combination before clicking **File > Exit** or the correct status will not be displayed.
9. You can then use the **Fn + F12** key combination to turn off the Bluetooth module (check the LED icon for the Bluetooth module power status).


IVT Corporation BlueSoleil - Main Window - Evaluation (5MB data only)
File View Bluetooth My Services Tools Help
Hide
Always on Top
Exit
Quits the BlueSoleil application.
Service Headset AG is started.
PAN IP: 192.168.50.1

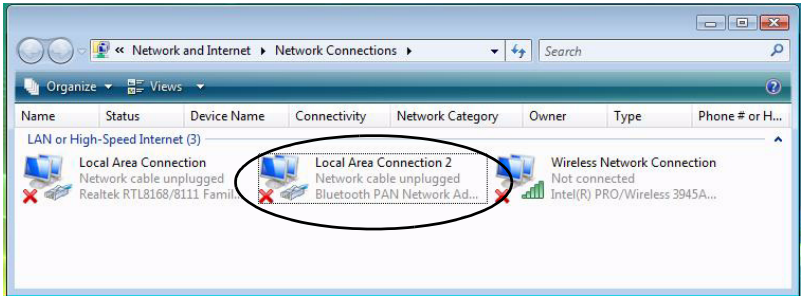


Figure 7 - 14
Bluetooth Disconnected

3.5G Module

If you have included an optional 3.5G module (see *"Communication" on page A - 4* for specification details) in your purchase option, you will have the appropriate software provided for your module. Follow the instructions below to install the USIM card (which will be provided by your service provider), and then install the application.

Before installing the **application**, make sure that the 3.5G module is on. Use the **Fn+( ) key combination** (see *"Function/Hot Key Indicators" on page 1 - 10*) **to toggle power to the 3.5G module**. Make sure you install the drivers in the order indicated in *Table , on page 4 - 3*.

1. Turn **off** the computer, and turn it over and **remove the battery**.
2. Locate the hard disk bay cover and loosen screws 1 & 2.
3. Remove the hard disk bay cover 3.
4. Grip the tab and slide the hard disk in the direction of arrow 4 to remove it.

Power Safety Warning

Before you undertake any installation procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Figure 7 - 15
Hard Disk Removal

5. Insert the USIM card as you would into your mobile phone.
6. The 3.5G module 5 is pictured on the left, and the installed USIM card 6 on the right in ***Figure 7 - 16***.

Figure 7 - 16
Module and USIM Card Location

7. Slide the SIMLOCK in the direction of the arrow 7 (***Figure 7 - 17***) in order to release the lock and lift it up.

Figure 7 - 17
SIMLOCK Unlock

8. Insert the USIM card as illustrated in (***Figure 7 - 18***) and close the SIMLOCK.

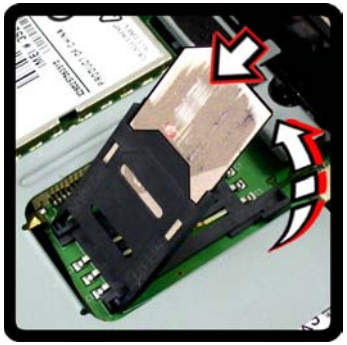


Figure 7 - 18
Insert the USIM Card

9. Close the SIMLOCK by pushing it in the direction of the arrow in ***Figure 7 - 19***.

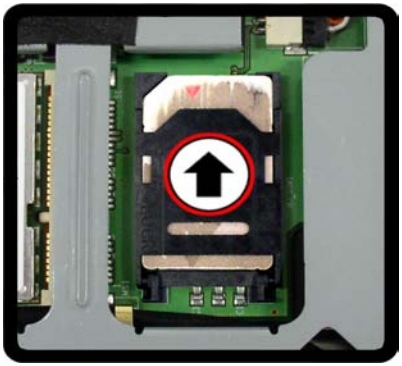


Figure 7 - 19
SIMLOCK Lock

10. Replace the hard disk assembly, cover, screws and battery etc.

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are OFF if you are using the computer aboard aircraft.

Use the **Fn +** key combination to toggle power to the 3.5G module, and check the indicator to see if the module is powered on or not (see ***Table 1 - 5, on page 1 - 10***/***Table 1 - 3, on page 1 - 7***).

3G Watcher Application

With the 3.5G module and USIM card (provided by your service provider) installed you may then install the 3G Watcher application. The 3.5G Watcher application allows you to directly access your 3.5G internet service from the computer.

3G Watcher Application Installation

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **4.3G Driver** > **Yes**.
4. Click **Next**.
5. Choose your region, and click **Next**.
6. Click the button to accept the license agreement, and then click **Next**.
7. Click **Next** > **Install**.
8. Click **Finish**, and the **3G Watcher** icon will appear on the desktop.
9. You can access the **3G Watcher** application from the **Start** menu (**Start** > **Programs/All Programs** > **Sierra Wireless** > **3G Watcher**), or by clicking the desktop icon .
10. Make sure you enable power to the module by pressing the **Fn +** key combination (the icon will be green).

Setting Up a Carrier Profile

Although the connection information is stored on the USIM card supplied by the service provider, you will need to set up the appropriate carrier profile from the 3G Watcher software.

1. Power on the 3.5G module using the **Fn +** key combination (the icon will be green).
2. Access the **3G Watcher** application from the **Start** menu (**Start** > **Programs/All Programs** > **Sierra Wireless > 3G Watcher**), or by clicking the desktop icon.
3. Click **Tools** and select **Options**.
4. Click **Profiles** and then click the **Add new profile** button, and select **WWAN profile**.

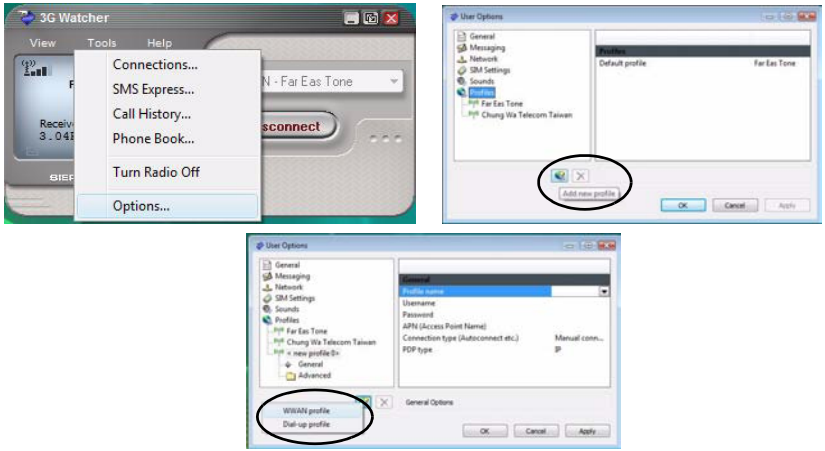


Figure 7 - 20
Add WWAN Profile

Figure 7 - 21
User Options

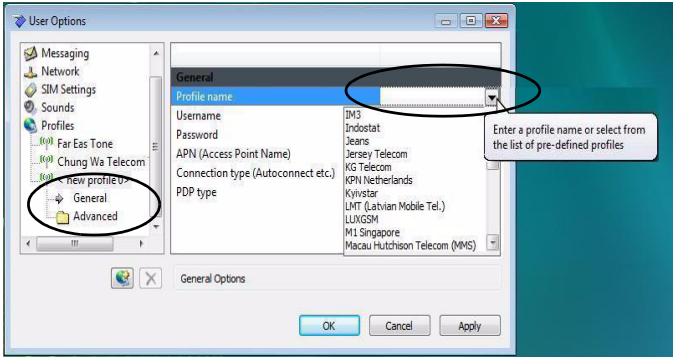
Profile Details

If you have chosen the profile from the drop-down list then most of the information in the **General** and **Advanced** tabs should be automatically filled in for you (however check with your service provider for the latest information as you may at least need to add in your **Username** and **Password**).

5. You can then enter a new profile name or choose a profile from the drop-down list provided by the software (see the **sidebars** for information on the profile details).

Profile Information

Click **General** and/or **Advanced** (and the **sub-menus** under **Advanced**) in the left menu, and then click in any of the fields to add the appropriate information supplied by your service provider.



6. Click **Apply > OK** to save the information.
7. You can choose the profile from the pull-down menu.

Figure 7 - 22
Choose Profile

Connecting to the Service Provider

1. Power on the 3.5G module using the **Fn +** key combination (the icon will be green).
2. You can access the **3G Watcher** application from the **Start** menu (**Start** > **Programs/All Programs** > **Sierra Wireless > 3G Watcher**), or by clicking the desktop icon .
3. The software will run and display the service provider name (see ***"Setting Up a Carrier Profile" on page 7 - 25***).

4. Click **Connect** Connect to begin the connection process.
5. The **3G Watcher** application will then display the connection information in the window.

6. When the connection is successful a taskbar notification will appear (as below).

Figure 7 - 23
Connected Taskbar Notification

7. You can then access the internet, download e-mail etc. as per any internet connection.
8. While you are connected the taskbar icon will be green (it will be red when the program is running but not connected).
9. To disconnect click the **Disconnect** Disconnect icon.

Figure 7 - 24
3GWatcher Connected

10. The program will disconnect from the service provider.
11. The module will still be on, and you will need to press the **Fn +** key combination (the icon will be off when disconnected).

12. If you click the **3G Watcher** close icon a message will be displayed asking you to click **OK** to confirm the program exit.

Figure 7 - 25
Exit Warning

13. Exiting the program DOES NOT turn off the 3.5G module, and you will need to press the **Fn +** key combination to turn off the module (pay careful attention to this aboard aircraft - see ***"Wireless Device Operation Aboard Aircraft" on page 7 - 24***).
14. If the module is on and the computer enters a power-saving state, then the power status of the module on resuming from the power-saving state will be as below:

- If the 3.5G module is on and the computer is **Shut Down or Restarted**; the module will be **off** when the computer starts up.
- If the 3.5G module is on and the computer enters **Sleep or Hibernate**; the module will be **off** when the computer resumes from sleep.

Short Messaging Service

In addition to standard internet services you may also send and receive SMS text messages using the **3G Watcher** program, if your service supports SMS.

Reading SMS Messages

1. The SMS message indicator in the main window will notify you of any new messages received.
2. Double-click the icon or select **Tools > SMS Express**.
3. Select the inbox folder and select any message to read it.
4. You cannot receive any new messages if the USIM card becomes full so you will need to delete some of the messages in order to fee up space on the USIM card.

Creating and Sending SMS Messages

1. Double-click the icon or select **Tools > SMS Express**.
2. Select **File > New Message** or click the **New** button.
3. Enter the recipient's number in the **To..** field or click the **To..** button to select an entry from the phone book, and click the **Message** button.
4. Type in the message details in the message body area.
5. Click the **Send** button (or save the message to send later).

For more details on SMS see **3GWatcher Online Help** from the **Help** > **Help Topics** menu.

Security Modules (Fingerprint & TPM)

The encrypted channel between the **Trusted Platform Module security chip** and the **optional fingerprint reader** with **Protector Suite Software** provides a high level of security for your computer. A further level of security and control is provided in the BIOS (see *"Security Menu" on page 5 - 11*).

The **fingerprint reader** and **Protector Suite Software** allow you to:

- Access or Lock your computer
- Protect sensitive files
- Display and file your favorite web pages
- Fill in frequently used dialogs
- Run your favorite applications

The **TPM security chip** allows you to create and manage digital certificates for user and platform authentication. This type of security is usually administered within large enterprises and organizations, and therefore requires implementation by a system administrator before users can access security features.

Individual users can use the TPM as an authentication with the fingerprint reader.

See overleaf for information installing and configuring the **Protector Suite Software**, and see *"Trusted Platform Module" on page 7 - 36* for information on TPM.

Password Warning

If you set passwords for any of the security modules, **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Help & Manual

Right-click the taskbar icon to bring up the menu to select **Help**.

Insert the *Device Drivers & Utilities + User's Manual CD-ROM* and click ***Option Drivers*** (button). Click **Unlock** (button) and then click **5.Fingerprint >Yes**.

Click **Documentation** to open the folder containing the manual in .pdf format.

To install the Adobe Acrobat Reader software to read the file, insert the *Device Drivers & Utilities + User's Manual CD-ROM* and click ***User's Manual*** (button), and click **Install Acrobat Reader** (button).

Fingerprint Reader Module

If you have included the fingerprint reader in your purchase option you will need to install the driver as per the instructions below.

Make sure you have administrator's rights to your computer, and have a ***Windows*** password enabled for full security protection.

Before beginning the enrollment process it is recommended that you go through the fingerprint tutorial. To run the tutorial click **Start > Programs/All Programs > Protector Suite QL > Fingerprint Tutorial** after installing the driver.

Fingerprint Reader Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **5.Fingerprint > Yes**.
4. Click **Software Installation**.
5. Click **Next > Next > Next**.
6. Click **Finish > Yes** to restart the computer.

User Enrollment

1. Click **Start > Programs/All Programs > Protector Suite QL > User Enrollment**, or double click the taskbar icon .
2. On the first run of the program you will be asked to click the button to accept the license, and then click **OK**.
3. Click **Next** and select "***Enrollment to the hard disk***", and click **Finish**.

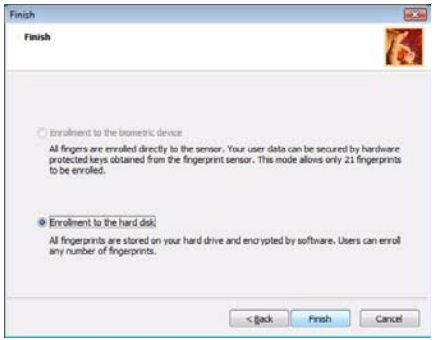

Finish
Finish
Enrollment to the biometric device
All fingers are enrolled directly to the sensor. Your user data can be secured by hardware protected keys obtained from the fingerprint sensor. This mode allows only 21 fingerprints to be enrolled.
Enrollment to the hard disk
All fingerprints are stored on your hard drive and encrypted by software. Users can enroll any number of fingerprints.
< Back
Finish
Cancel

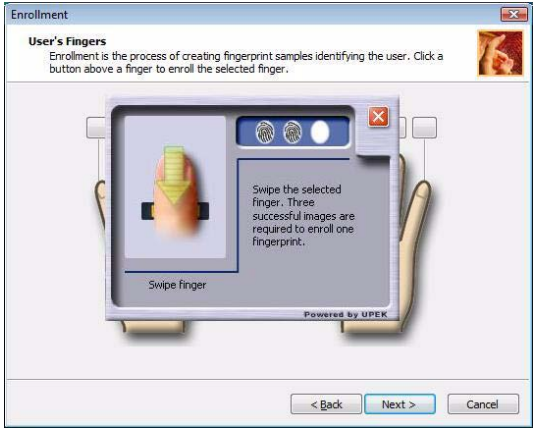
Figure 7 - 26
Enroll to Hard Disk

4. If you have not set a ***Windows*** password you will be prompted to do so (**note**: If you have not set a password **Protector Suite QL** cannot secure access to your computer).
5. Click **Next**.
6. You will then be prompted to enter your ***Windows*** password.
7. Click **Next > Next** (if you have the "***Run interactive tutorial***" tickbox selected you will run through the Fingerprint Tutorial).
8. Click **Next** for each window of the tutorial (you can click the button to "***skip tutorial***" at any time).

Fingerprint Enrollment

Note that it is strongly recommended that you **enroll more than one finger in case of injury etc.**

9. Click the button above any of the fingers to begin the enrollment process for that finger.
10. Swipe the finger three times to enroll that finger.
11. Repeat the process for all the fingers you wish to enroll (see sidebar), and then click **Next**.
12. Click **Finish**.
13. Click any of the headings under "**Learn more about**:" to get more information on any topic.
14. Click **Close**.


Enrollment
User's Fingers
Enrollment is the process of creating fingerprint samples identifying the user. Click a button above a finger to enroll the selected finger.
Swipe the selected finger. Three successful images are required to enroll one fingerprint.
Swipe finger
Powered by UPEK
< Back
Next >
Cancel

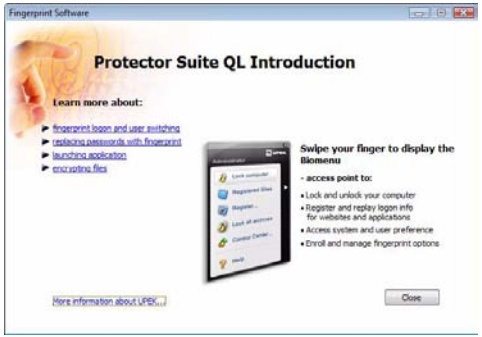

Fingerprint Software
Protector Suite QL Introduction
Learn more about:
fingerprint logon and user switching
replacing passwords with fingerprint
launching application
encrypting files
Swipe your finger to display the Biomenu
- access point to:
• Lock and unlock your computer
• Register and replay logon info for websites and applications
• Access system and user preference
• Enroll and manage fingerprint options
More information about UPEK...
Close

Figure 7 - 27
Fingerprint Enrollment

15. Restart the computer.
16. Right-click the taskbar icon to bring up the menu that allows you to **Edit Fingerprints**, **Start Control Center**, access the **Help** menu etc. You can also run

the **Control Center** etc. from the **Protector Suite QL** item in the **Programs/All Programs** menu.

Figure 7 - 28
Control Center & Biomenu

17. See ***"Help & Manual" on page 7 - 32*** for further details.
18. If you swipe your finger over the reader at any time you can access the **Biomenu** to **lock the computer**, **register websites**, open the **Control Center** and access the **Help** menu.
19. The **Control Center** allows you to change the **Settings**, **enroll Fingerprints** and get **Help**.

Trusted Platform Module

Before setting up the TPM functions you must initialize the security platform.

Initializing TPM

1. Restart the computer.
2. Enter the **PhoenixBIOS Setup Utility by** pressing **F2** during the **POST**.
3. Use the arrow keys to select the **Security** menu.
4. Select **TPM Support** and set the item to ***Enabled***.
5. The **TPM State** menu will then appear.

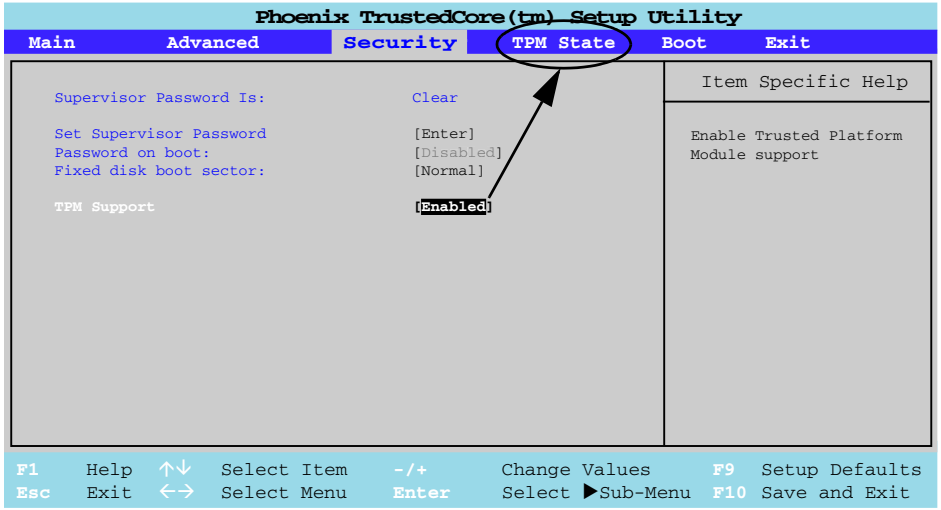


Figure 7 - 29
TPM Support

6. Use the arrow keys to select the **TPM State** menu.
7. Select **TPM State**, and set the item to ***Enable & Activate***.

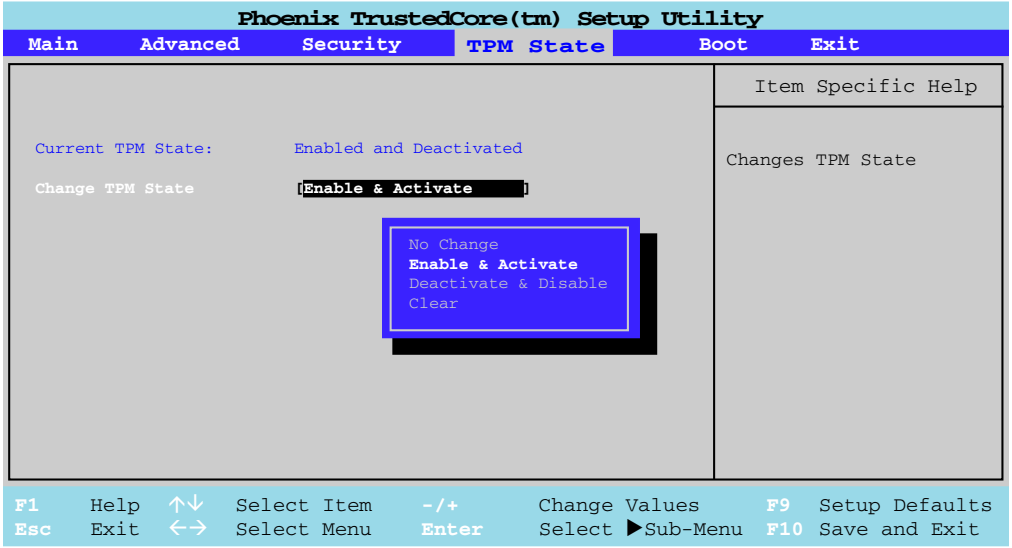


Figure 7 - 30
TPM State

8. Press **F10** to save the changed BIOS information, exit the BIOS and restart the computer.
9. If you make any changes to the TPM State you will be asked to **Execute/Reject** the change after restart (***"Physical Presence Operations" on page 5 - 14***).
10. You can now install the TPM driver (see overleaf).

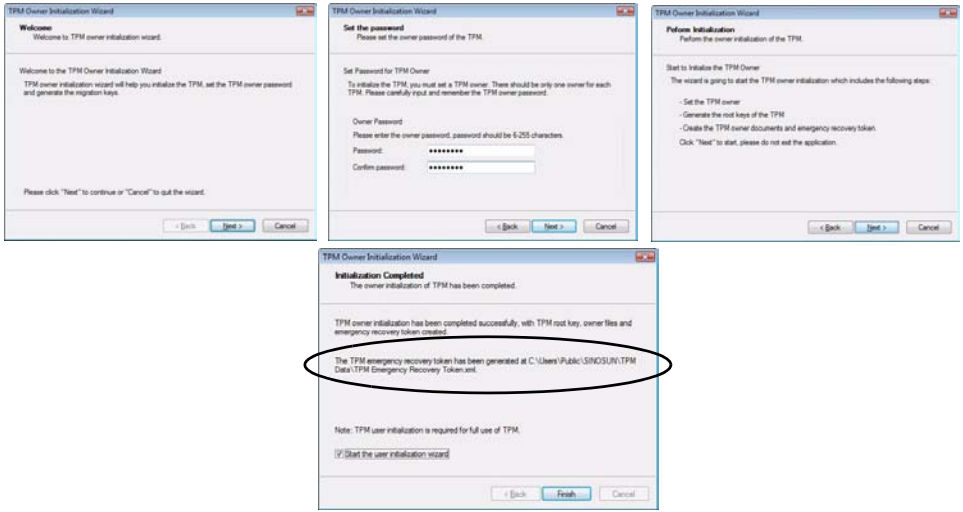
TPM Module Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **6.TPM** > **Yes**.
4. Click **Next**.
5. Click the button to accept the license agreement, and then click **Next**.
6. Click **Next** > **Next** > **Install**.
7. Click **Finish**.
8. Run the **TPM** application program from the shortcut on the desktop, or from the **TPM Secure Tools** item in the **Start** > **Programs/All Programs** menu.

Initializing TPM

On the first run of the program you will need to initialize the TPM.

1. Run the application from the **Security Manager** shortcut on the desktop, or from the **TPM Secure Tools** item in the **Start > Programs/All Programs** menu.
2. Click **Next**.
3. Type a **TPM Owner Password**, and then retype to confirm the password.
4. Click **Next** (you may want to add Owner Password Tips) **> Next** to begin the owner initialization process.
5. Click **Finish** to start **User Initialization** process.



Password Warning

Do not lose the password. If you do so you will be unable to make administrative changes unless you clear the TPM. This could then result in data loss.

Recovery Token

Note the location of the emergency recovery token. It is recommended that you save the file to removable media such as a USB Flash drive (or backup using the tool provided - see page 7 - 47).

Figure 7 - 31
TPM Owner Initialization

6. Click **Next**.
7. Type a **TPM User Password**, and then retype to confirm the password.
8. Click **Next >** (you may want to add Owner Password Tips) **Next** to begin the user initialization process.
9. Click **Finish** and then enter the user password and click **Logon**.

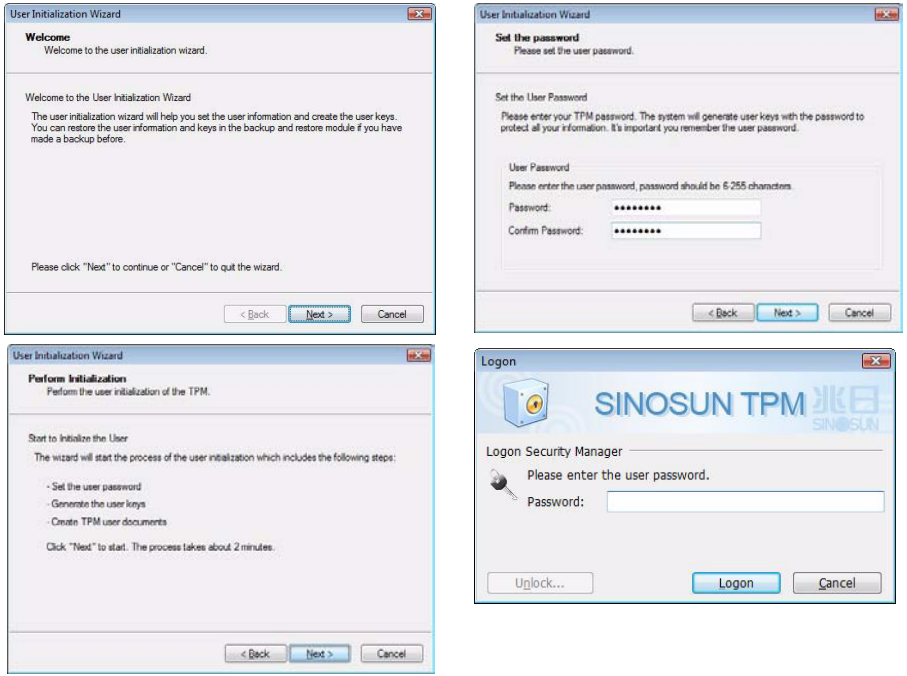

User Initialization Wizard
Welcome
Welcome to the user initialization wizard.
Welcome to the User Initialization Wizard
The user initialization wizard will help you set the user information and create the user keys. You can restore the user information and keys in the backup and restore module if you have made a backup before.
Please click "Next" to continue or "Cancel" to quit the wizard.
< Back
Next >
Cancel
User Initialization Wizard
Set the password
Please set the user password.
Set the User Password
Please enter your TPM password. The system will generate user keys with the password to protect all your information. It's important you remember the user password.
User Password
Please enter the user password, password should be 6-255 characters
Password:
Confirm Password:
< Back
Next >
Cancel
User Initialization Wizard
Perform Initialization
Perform the user initialization of the TPM.
Start to Initialize the User
The wizard will start the process of the user initialization which includes the following steps:
- Set the user password
- Generate the user keys
- Create TPM user documents
Click "Next" to start. The process takes about 2 minutes.
< Back
Next >
Cancel
Logon
SINOSUN TPM
Logon Security Manager
Please enter the user password.
Password:
Unlock...
Logon
Cancel

Figure 7 - 32
TPM User Initialization & Logon

TPM Manager

The TPM Manager allows you to manage and check the TPM state, manage your password information, and to backup and restore the TPM data. As TPM is usually administered within large enterprises and organizations, your system administrator will need to assist you in managing the information in the TPM Manager.

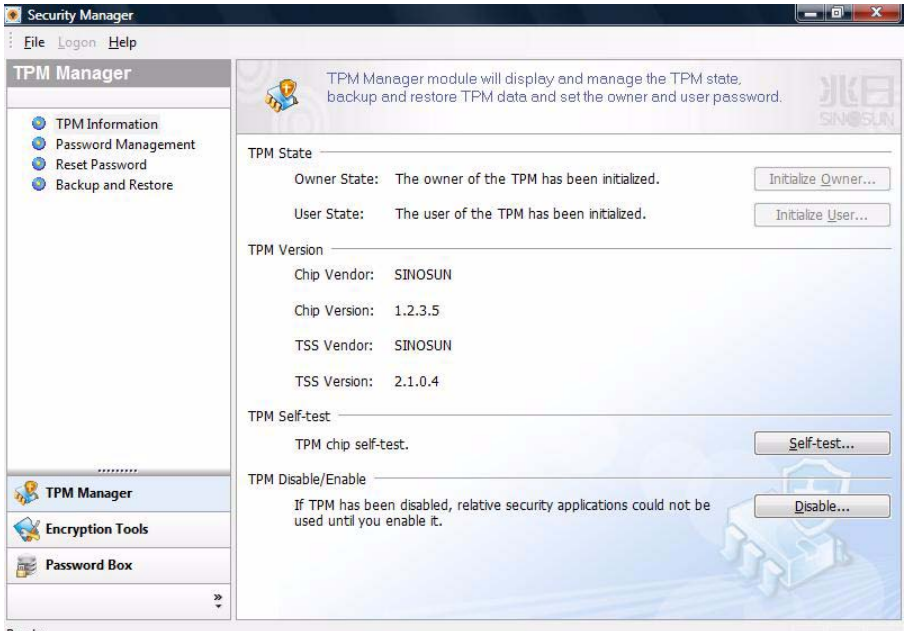

Security Manager
File Logon Help
TPM Manager
TPM Information
Password Management
Reset Password
Backup and Restore
TPM Manager module will display and manage the TPM state, backup and restore TPM data and set the owner and user password.
TPM State
Owner State: The owner of the TPM has been initialized.
Initialize Owner...
User State: The user of the TPM has been initialized.
Initialize User...
TPM Version
Chip Vendor: SINOSUN
Chip Version: 1.2.3.5
TSS Vendor: SINOSUN
TSS Version: 2.1.0.4
TPM Self-test
TPM chip self-test.
Self-test...
TPM Disable/Enable
If TPM has been disabled, relative security applications could not be used until you enable it.
Disable...
TPM Manager
Encryption Tools
Password Box

Figure 7 - 33
TPM Manager (TPM Information)

Encrypting/Decrypting a File

You can encrypt and decrypt files from the context menu in ***Windows***.

1. **Right-click** the file icon to bring up the context menu.
2. Select **File Encryption Tool**.
3. Select **Encrypt/Decrypt**.
4. The file will then be encrypted/decrypted.
5. Click **OK**.

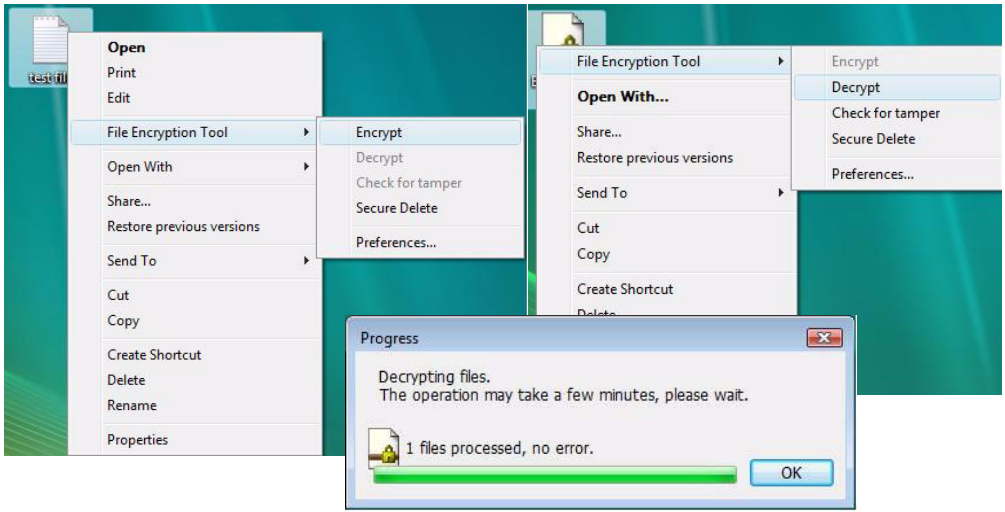


Figure 7 - 34
Encrypting/Decrypting a File

Creating an Encrypted Virtual Disk

You can create an encrypted virtual disk drive (an area of the hard disk you can hide and mount when required) from the **Security Manager** application.

1. Run the application from the **Security Manager** shortcut on the desktop, or from the **TPM Secure Tools** item in the **Start > Programs/All Programs** menu.
2. Click **Encryption Tools**.
3. Click **Encrypted Virtual Disk**.
4. Click **New**.

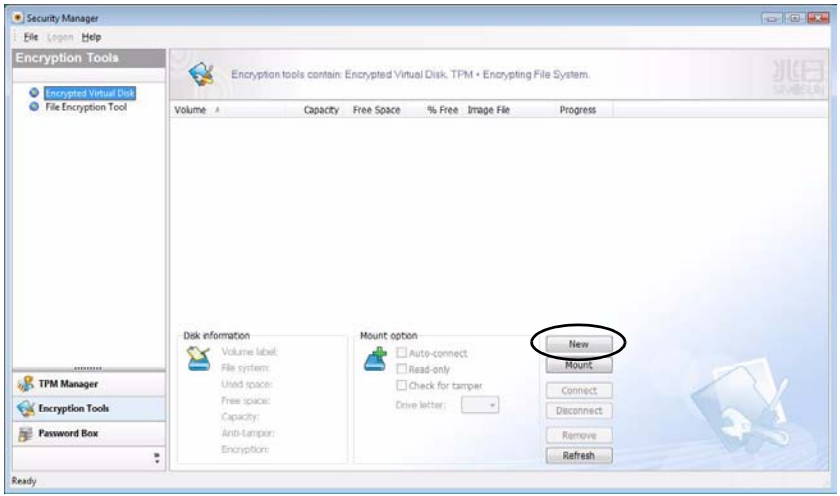


Figure 7 - 35
Encrypted Virtual Disk

5. Type in the Image File name, Volume Label, location (Browse to file location) and capacity in MB (maximum size is 1GB).
6. Click **OK**.
7. The disk will now be created.
8. Click **OK**.

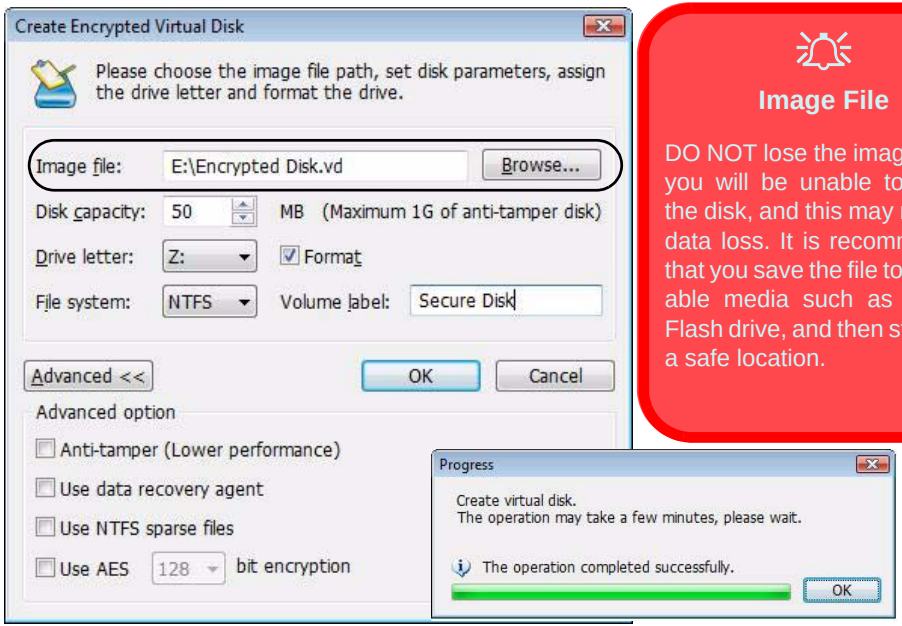


Image File

DO NOT lose the image file or you will be unable to mount the disk, and this may result in data loss. It is recommended that you save the file to removable media such as a USB Flash drive, and then store it in a safe location.

Figure 7 - 36
Create Encrypted Virtual Disk

Mounting and Removing an Encrypted Virtual Disk

You can mount and remove the disk using the **Security Manager** application.

1. Run the application from the **Security Manager** shortcut on the desktop, or from the **TPM Secure Tools** item in the **Start > Programs/All Programs** menu.
2. Click **Encryption Tools**.
3. Click **Encrypted Virtual Disk**.
4. Click **Mount** to bring up any virtual disk, or click **Remove** to hide the disk.
5. When mounting a disk you will be asked to browse to the image file.

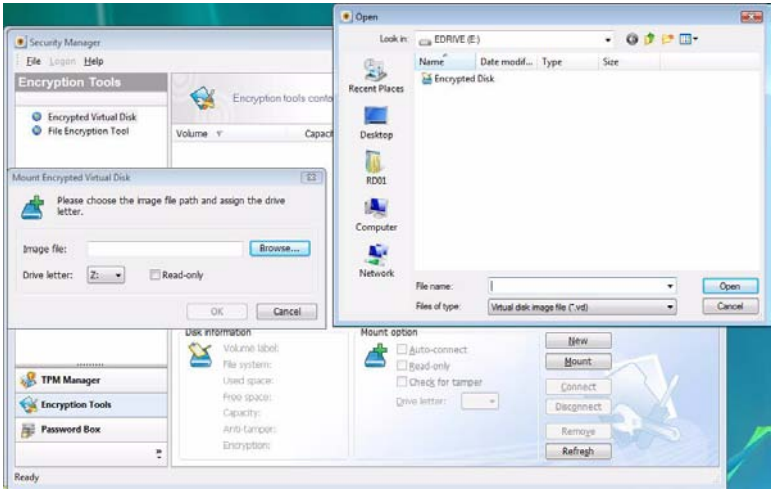


Figure 7 - 37
Mount Encrypted Virtual Disk

6. **Mounting** the disk will require the encrypted image file.
7. If you click **Disconnect** you can hide the disk without the need to browse to the encrypted image file (simply click **Connect** to bring up disk again).
8. Clicking **Remove** will clear the disk information from the menu (the data is still safe), and you will be required to **Mount** the disk again to access it (by accessing the encrypted image file).

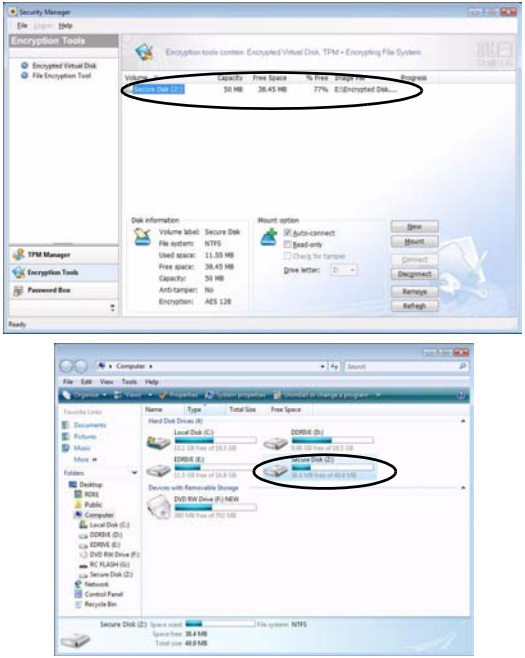


Figure 7 - 38
Encrypted Virtual Disk

Backing up a TPM Profile

It is recommended that you backup your TPM profile and save it to a safe location (DO NOT save the file to a virtual disk).

1. Run the application from the **Security Manager** shortcut on the desktop, or from the **TPM Secure Tools** item in the **Start > Programs/All Programs** menu.
2. Click **Backup and Restore**.
3. Click **Backup > Next**.
4. Click **Browse.. (button)** to save the file to a removable media.
5. Click **Next > Next > Finish**.
6. The file can be restored from the **Backup and Restore** menu.

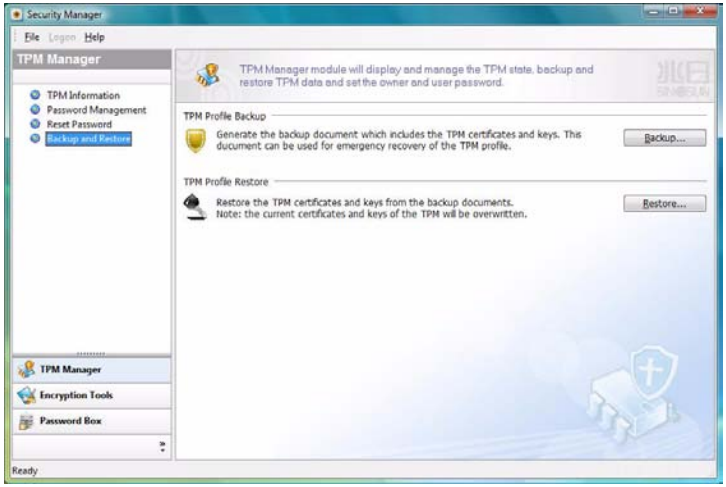

Security Manager
File Logon Help
TPM Manager
TPM Information
Password Management
Reset Password
Backup and Restore
TPM Manager module will display and manage the TPM state, backup and restore TPM data and set the owner and user password.
TPM Profile Backup
Generate the backup document which includes the TPM certificates and keys. This document can be used for emergency recovery of the TPM profile.
Backup...
TPM Profile Restore
Restore the TPM certificates and keys from the backup documents.
Note: the current certificates and keys of the TPM will be overwritten.
Restore...
TPM Manager
Encryption Tools
Password Box
Ready

Figure 7 - 39
Backup and Restore

Intel Turbo Memory Module

If you have included an ***Intel Turbo Memory (Robson) NAND flash memory card module*** in your purchase option, then you will need to enable the option in the BIOS (see ***"Advanced Menu" on page 5 - 8***) BEFORE installing the *Windows Vista* operating system software (do not enable this option in *Windows XP* or on a *Windows Vista* operating system that has been installed without the option enabled).

Intel Turbo Memory Technology (also known as **Robson flash memory**) is an Intel technology that reduces the time it takes for a computer to boot up, to load applications, and to write data to the hard drive. ***Intel Turbo Memory Technology*** is supported in *Windows Vista* only (it also supports *Windows Vista* features such as ReadyBoost, ReadyDrive, and Superfetch).

Intel Turbo Memory Setup and Driver Installation

1. Start-up your computer and press <**F2**> to enter the **BIOS**.
2. Go to the **Advanced** menu (see ***"Advanced Menu" on page 5 - 8***).
3. Select **Advanced Chipset Control** and press Enter.
4. Press the spacebar to make sure that **Intel Robson** is **Enabled**.
5. Go to the **Boot** menu (see ***"Boot Menu" on page 5 - 15***).
6. Set the **external *CD/DVD-ROM Drive*** (make sure the ***Microsoft Windows Vista OS CD*** is inserted) as the first device in the boot order from the **Boot**

priority order menu (use the "**f**" and "**r**" keys to move the device up and down the priority order.

7. Select ***Exit Saving Changes*** from the **Exit** menu (or press **F10** and Enter) and press Enter to exit the BIOS and reboot the computer.
8. As the computer starts up, press a key when you see the message "***Press any key to boot from CD or DVD***".
9. The system software will prompt you through the installation procedure (see the ***Microsoft Windows Vista OS*** documentation for more details).
10. Install the drivers as per the instructions in ***Chapter 4*** (make sure the drivers are installed in the order indicated in ***Table 4 - 1, on page 4 - 3***).
11. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
12. Click **Option Drivers** (button).
13. Click **7.Robson > Yes**.
14. Click **Next > Yes > Next > Next**.
15. Click **Finish** to restart the computer.
16. After restarting the computer click **Restart Now** to complete the installation procedure after the computer has made the necessary hardware changes.

Chapter 8: Troubleshooting

Overview

Should you have any problems with your computer, before consulting your service representative, you may want to try to solve the problem yourself. This chapter lists some common problems and their possible solutions. This can't anticipate every problem, but you should check here before you panic. If you don't find the answer in these pages, make sure you have followed the instructions carefully and observed the safety precautions in the preface. If all else fails, talk to your service representative. You should also make a record of what happened and what remedies you tried.

Of course, if something goes wrong, it will happen at the most inconvenient time possible, so you should preview this section just in case. If, after you've tried everything, and the system still won't cooperate, try turning it off for a few minutes and then rebooting. You will lose any unsaved data, but it may start working again. Then call your service representative.

Basic Hints and Tips

Many of the following may seem obvious but they are often the solution to a problem when your computer appears not to be working.

- **Power** - Is the computer actually plugged into a working electrical outlet? If plugged into a **power strip**, make sure it is actually working. Check the **LED Power & Communication Indicators** (see ***"LED Indicators" on page 1 - 7***) to see the computer's power status.
- **Connections** - Check all the **cables** to make sure that there are no **loose connections** anywhere.
- **Power Savings** - Make sure that the system is not in **Hibernate** or **Sleep** mode by pressing the keys configured in your P*ower Options* (see ***"Power-Saving States" on page 3 - 6***), the **Fn + F4** key combination, or power button to wake-up the system.
- **Brightness** - Check the brightness of the screen by pressing the **Fn** + **F8 and F9** keys to adjust the brightness.
- **Display Choice** - Press **Fn** + **F7** to make sure the system is not set to "external only" display.
- **Boot Drive** - Make sure there are no **optical media and/or USB storage devices** in any connected drive (this is a common cause of the message "***Invalid system disk - Replace the disk, and then press any key***" / "***Remove disks or other media. Press any key to restart***").

Backup and General Maintenance

- Always **backup** your important data, and keep copies of your OS and programs safe, but close to hand. Don't forget to note the **serial numbers** if you are storing them out of their original cases, e.g. in a CD wallet.

- Run **maintenance programs** on your hard disk and OS as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those that are provided free with your OS, or buy the more powerful dedicated programs to do so.

- Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a **Supervisor** password for the BIOS (see *"The Power-On Self Test (POST)" on page 5 - 2*).

- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc.(even if just brief notes).

Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Viruses

- Install an **Anti-Virus** program and keep the **definitions file** (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. **Anti-Virus** programs are commercially available and the **definitions file updates** are usually downloadable directly from the internet.

- Be careful when opening e-mail from sources you don't know. **Viruses** are often triggered from within **e-mail attachments** so take care when opening any attached file. You can configure most **Anti-Virus** programs to check all **e-mail attachments**. **Note**: You should also beware of files from people you know as the virus may have infected an **address book** and been automatically forwarded without the person's knowledge.

- Keep a "**Bootable CD-ROM/DVD-ROM/USB storage device**" (this CD/DVD/USB device provides basic information which allows you to startup your computer) handy. You may refer to your OS's documentation for instructions on how to make one, and many **Anti-Virus** programs will also provide such a disk (or at least instructions on how to make one).

Upgrading and Adding New Hardware/Software

- Do not be tempted to make changes to your **Windows Registry** unless you are very sure of what you are doing, otherwise you will risk severely damaging your system.

- Don’t open your computer or undertake any repair or upgrade work if you are not comfortable with what you are doing.

- Read the **documentation**. We can assume, since you are reading this that you are looking at the computer’s manual, but what about any new peripheral devices you have just purchased? Many problems are caused by the installation of new hardware and/or software. Always refer to the documentation of any new hardware and/or software, and pay particular attention to files entitled “**READ ME**” or “**READ ME FIRST**”.

- When installing a new device always make sure the device is powered on, and in many cases you will need to restart the computer. Always check that all the cables are correctly connected.

- Make sure you have installed the **drivers** for any new hardware you have installed (latest **driver files** are usually available to download from vendor’s websites).

Troubleshooting

- Thoroughly check any **recent changes** you made to your system as these changes may affect one or more system components, or software programs. If possible, go back and undo the change you just made and see if the problem still occurs.
- Don’t over complicate things. The less you have to deal with then the easier the source of the problem may be found; **Example** - if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

Problems and Possible Solutions

Problem	Possible Cause - Solution
You turned on the **power** but it doesn't work.	*Battery missing / incorrectly installed.* Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.
The battery **LED power** indicator , is blinking orange.	*Low Battery.* Plug in the DC power source. If the computer doesn't start up immediately, turn it off then on again.
You are **losing battery power** too quickly.	*The system is using too much power.* If your *OS* has a *Power Options* scheme (see ***"Power Plans" on page 3 - 4***/***"Power Schemes" on page D - 18***) check its settings. You may also be using an ExpressCard/USB device/external device that is drawing a lot of power.
Actual **battery operating time** is shorter than expected.	*The battery has not been fully discharged before being recharged.* Make sure the battery is fully discharged and recharge it completely before reusing (see ***"Battery Information" on page 3 - 10***/***"Battery Information" on page D - 23***). *Power Options have been disabled.* Go to the **Control Panel** in *Windows* and re-enable the options. *A peripheral device/USB device/*ExpressCard *is consuming a lot of power.* Turn off/remove the unused device to save power.

Problem	Possible Cause - Solution
The computer feels **too hot**.	Make sure the computer is properly ventilated and the Vent/Fan intakes are not blocked. If this doesn't cool it down, put the system into **Hibernate** mode or turn it off for an hour. Make sure the computer isn't sitting on a thermal surface (see ***"Overheating" on page 1 - 14***). Make sure you're using the correct adapter. Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the Vent/Fan intakes to be blocked.
Nothing appears on screen.	*The system is in a power saving mode*. Toggle the sleep/resume key combination, **Fn + F4** (see ***"Configuring the Power Buttons" on page 3 - 8***/***"Configuring the Power Button" on page D - 22***). *The screen controls need to be adjusted.* Toggle the screen control key combinations **Fn + F8/F9**. If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls. *The computer is set for a different display.* Toggle the screen display key combination, **Fn + F7**. If an external monitor is connected, turn it on. *The **screen saver** is activated.* Press any key or touch the **TouchPad**.
No image appears on the **external monitor** I have plugged in and powered on.	*You haven't installed the video driver and configured it appropriately from the **Control Panel**.* See ***Appendix B***/***"Video Features" on page D - 7*** for instructions on installing and configuring the video driver.

Problem	Possible Cause - Solution
You forget the **boot password**.	*If you forget the password, you may have to discharge the battery of the CMOS.* Contact your service representative for help.
Password Warning If you choose to set a boot password, **NEVER** forget your password. The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.	
The sound cannot be heard or the **volume is very low**.	*The volume might be set too low.* Check the volume control in the ***Volume Control Panel*** in the *Windows* taskbar, or use the key combination **Fn + F5** and **F6** (see ***"Function/Hot Key Indicators" on page 1 - 10***) to adjust.
The CD/DVD **cannot be read**.	*The CD/DVD is dirty.* Clean it with a CD/DVD cleaner kit.
The CD/DVD **tray will not open** when there is a disc in the tray.	*The* CD/DVD *is not correctly placed in the tray.* Gently try to remove the disc using the eject hole (see ***"Loading Discs" on page 2 - 3***).
The **DVD regional codes** can no longer be changed.	*The code has been changed the maximum **5** times.* See ***"DVD Regional Codes" on page 2 - 5***/***"DVD Regional Codes" on page D - 2***.
Unwelcome numbers appear when typing.	*If the LED is lit, then Num Lock is turned **ON**.* (see ***"LED Indicators" on page 1 - 7***).

Problem	Possible Cause - Solution
Other Keyboards If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot keys unique to the system's regular keyboard may not work.	
The **system freezes** or the screen goes dark.	*The system's power saving features have timed-out*. Use the AC/DC adapter, press the sleep (**Fn + F4**) key combination, or press the power button if no LEDs are lit.
The system never goes into a **power saving mode**.	Power Options features are not enabled. Go to the ***Windows*** Power Options menu and enable the features you prefer (see ***"Power-Saving States" on page 3 - 6***/***"System Power Options" on page D - 20***). Make sure you have enabled **Hibernate** mode from the control panel.
The **Wireless LAN/Bluetooth/3.5G** modules cannot be detected.	*The modules are off.* Check the LED indicator and/or function key indicator to see if the WLAN/Bluetooth/3.5G module is on or off (see ***"LED Indicators" on page 1 - 7***). If the LED indicator is off, then press the **Fn + F11 (WLAN)**, **Fn + F12 (Bluetooth) or Fn + (3.5G)** key combination(s) in order to enable the modules (see ***"Function/Hot Key Indicators" on page 1 - 10***).

Problem	Possible Cause - Solution
The **PC Camera** module cannot be detected.	*The module is off.* Press the **Fn + F10** key combination in order to enable the module (see ***"Function/Hot Key Indicators" on page 1 - 10***). Run the **BisonCap/Video View** program to view the camera picture.
The **Wireless LAN/Bluetooth/ PC Camera/3.5G** modules cannot be configured.	The driver(s) for the module(s) have not been installed. Make sure you have installed the driver for the appropriate module (see the instructions for the appropriate module in ***"Modules & Options" on page 7 - 1***/***"Module Drivers" on page D - 31***).
An LCD is connected to the External Monitor Port and ***Windows Media Center*** is being used to play a DVD. When the **Fn + F7** key combination is used to switch displays the screen will turn black.	*This is a known issue with older Intel video drivers.* Use the **Ctrl + Alt + Delete** key combination, and then use **Task Manager** to end the ***Windows Media Center*** task. Contact your service center to obtain the latest Intel driver.
An LCD is connected to the External Monitor Port and ***Extended Desktop*** has been selected as the Intel **Multiple Display** mode. When the **Fn + F7** key combination is used to switch displays the screen will display garbage.	*This is a known issue with older Intel video drivers.* Contact your service center to obtain the latest Intel driver.

Problem	Possible Cause - Solution
An LCD is connected to the External Monitor Port when using **Cyberlink Power DVD Ver 7** to play a **VCD.** No image will be displayed on the external display when ***Extended Desktop or Clone*** have been selected using Intel **Multiple Display** mode.	*Note that VCDs can not be played on an external display using Cyberlink Power DVD 7*. If you wish to play VCD's on an external display, then use ***Windows Media Player*** to do so.

Appendix A: Interface (Ports & Jacks)

Overview

The following chapter will give a quick description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

Notebook Ports and Jacks

Item	Description
Card Reader Port	The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device.
DC-In Jack	Plug the supplied AC/DC adapter into this jack to power your computer.
External Monitor (VGA) Port	This port allows you to connect an external monitor, or Flat Panel Display, to get dual video or simultaneous display on the LCD and external monitor/FPD.
Headphone-Out Jack	Headphones or speakers may be connected through this jack. **Note**: Set your system's volume to a reduced level before connecting to this jack.
Microphone-In Jack	Plug an external microphone in to this jack to record on your computer.

Item	Description
Mini-IEEE 1394 Port	This port allows a high-speed connection to various peripheral devices, e.g. external disk drives and digital cameras (**see note below**). **Mini-IEEE 1394 Port** The Mini-IEEE 1394 port only supports **SELF POWERED** IEEE 1394 devices.
RJ-11 Modem Jack	This port connects to the built-in modem. You may plug the telephone line directly into this RJ-11 telephone connection. **Note**: Broadband (e.g. ADSL) modems usually connect to the LAN port.
RJ-45 LAN Jack	This port supports LAN (Network) functions. **Note**: Broadband (e.g. ADSL) modems usually connect to the LAN port.
Security Lock Slot	To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.
S/PDIF-Out Jack SPDIF	This S/PDIF (Sony/Philips Digital Interface Format) Out Jack allows you to connect your DVD-capable PC to a Dolby AC-3 compatible receiver for “5.1” or ‘dts’ surround sound.

Interface (Ports & Jacks)

Item	Description
USB 2.0/1.1 Ports	These USB 2.0 compatible ports (USB 2.0 is fully USB 1.1 compliant) are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device).

Appendix B: Intel Video Driver Controls

The basic settings for configuring the LCD are outlined in *"Video Features" on page 1 - 16*.

Intel Video Driver Installation

Make sure you install all the drivers in the order indicated in *Table , on page 4 - 3*.

Video

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (Win Vista)*** into the CD/DVD drive.
2. Click **Install Vista Drivers**.
1. Click **1.Install Video Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Dynamic Video Memory Technology

Intel® DVMT automatically and dynamically allocates as much system memory (RAM) as needed to the video system (**the video driver must be installed**). DVMT returns whatever memory is no longer needed to the operating system.

DVMT Notes

DVMT is not local video memory.

DVMT is not user-configurable.

DVMT will not function in MS-DOS. DOS uses the legacy memory indicated.

Taskbar Icon

The **Intel GMA** control panel can also be accessed by clicking the icon in the taskbar and selecting **Graphics Properties** from the menu.

If you cannot see the tray icon click the "**Show Tray Icon**" tickbox in the **Intel(R) Graphics Media Accelerator for Mobile** tab.

Intel Graphics Properties

More advanced video configuration options are provided by the **Intel(R) Graphics Media Accelerator Driver for Mobile**.

1. Open the **Display Settings** control panel (see *"Video Features" on page 1 - 16*) and click **Advanced Settings** (button).
2. Click the **Intel(R)...** tab and click **Graphics Properties** (button).

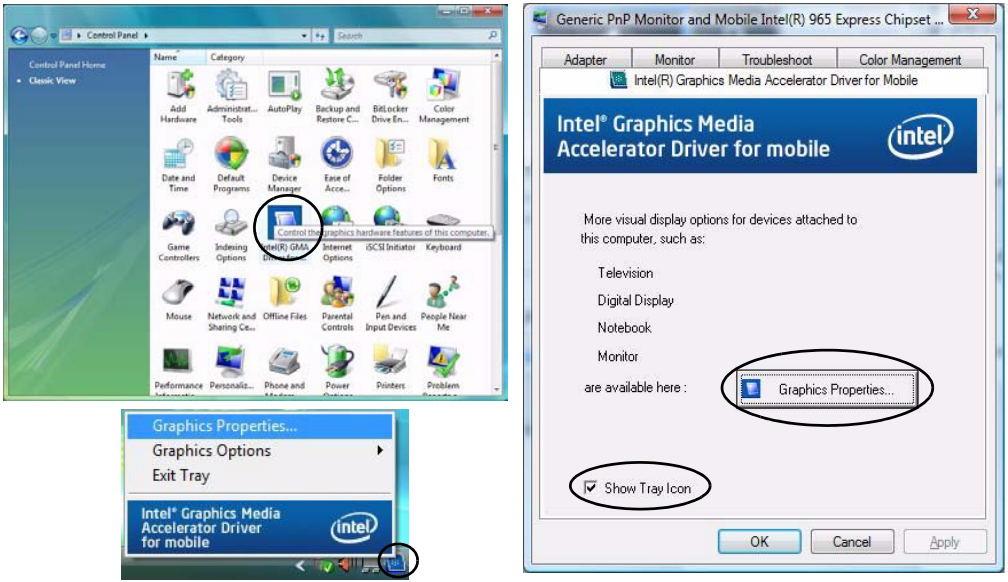
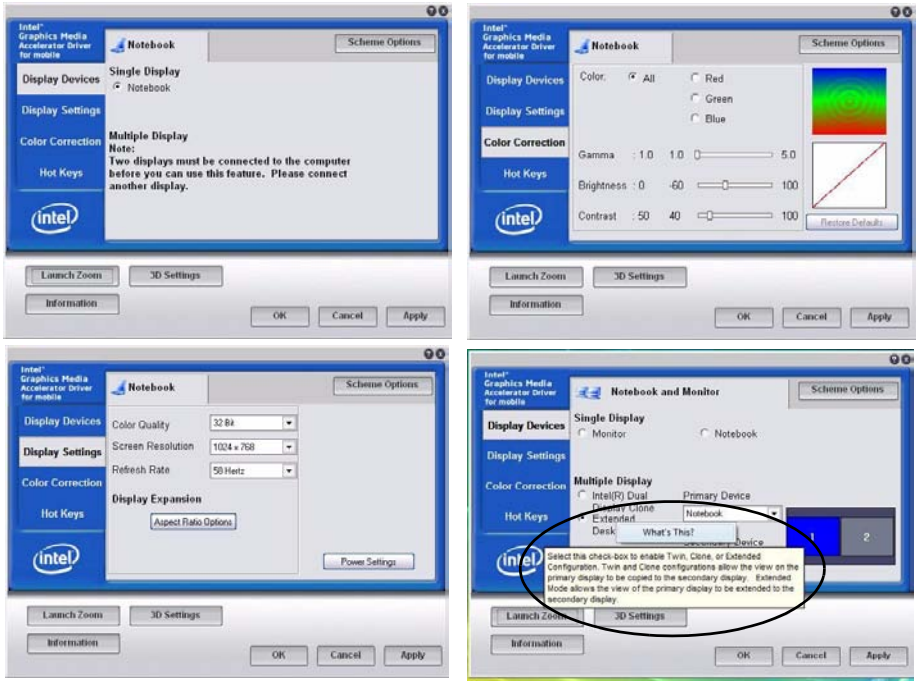


Figure B - 1
Intel Graphics Properties

You may make changes to the devices, color, schemes, **Hot Keys** etc. by clicking the appropriate menu item or button. Click **Information** (button) to obtain useful information about the graphics properties of the computer, and see the **Support** tab in **Information** to get weblinks to the latest information on the Intel Website.



Help Menus

Right-click on many of the items in the tabs to bring up the "What's This?" button.

Click the "What's This?" button to bring up the help menu.

Multiple Display

At least one other display must be attached in order to view **Multiple Display** options.

Figure B - 2
Intel Graphics Media Accelerator Driver for mobile (Control Panel Tabs)

B

Application.exe

You will need to locate the actual **application executable (.exe) file**, not just the shortcut. To find the application right-click its **shortcut** on the desktop click **Properties**. Click the **Shortcut** (tab) and see where the executable file is located by clicking the **Find Target** (button). Note the location and you will then be able to browse to this file.

Scheme Options

Use Scheme Options to configure quick settings for applications which require specific resolution and color settings in order to run properly e.g. games, multimedia programs. To set the scheme options:

1. Open the **Display Settings** control panel and click **Advanced Settings** (button).
2. Click the **Intel(R)...** tab and click **Graphics Properties** (button).
3. Configure your display configuration, resolution etc. as per your requirements from **Display Settings**.
4. Click on **Scheme Options** (button).
5. Type a name for the scheme then click **Save**.
6. If you want to automatically launch an application when running the scheme click on **Browse** (button).
7. **Browse** to the executable file for the application you want to set the scheme for (see sidebar), and click **Open** to select it.
8. Click **Save (Save > OK)** to save the settings (you can click in the "**Restore the display settings after exiting this application**" box to return to your original settings when you exit the program).
9. Click **OK** to exit the window.
10. You can run the scheme by clicking the taskbar icon and selecting the scheme from **Select Scheme**.

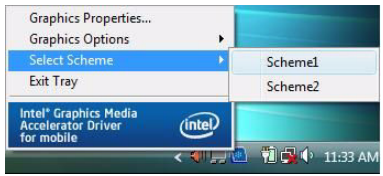


Figure B - 3
Select Scheme

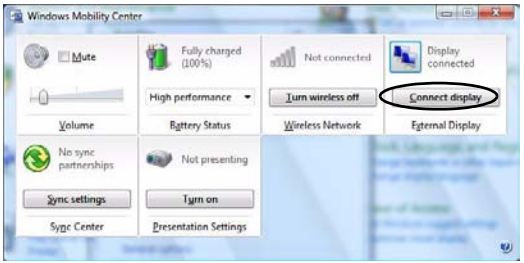
Attaching Other Displays

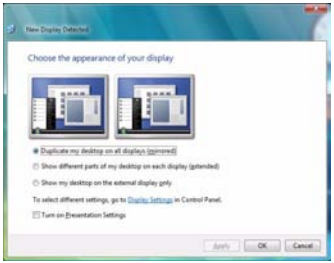
Besides the built-in LCD, you can also use an external monitor/flat panel display, connected to the external monitor port at the rear of the computer, as your display device. The following are the display options:

1. The built-in LCD **OR** an external monitor/flat panel display connected to the external monitor port (**Single Display**).
2. The built-in LCD **AND** an external monitor/flat panel display connected to the external monitor port (**Multiple Display**).

Configuring from Windows Vista

1. Attach your external display to the external monitor port, and turn it on.
2. If a **New Display Detected** window does not appear in ***Windows Vista***, go to the **Windows Mobility Center** control panel (**Mobile PC > Adjust commonly used mobility settings**) and click ***Connect display***.
3. Click on any of the buttons to configure the displays to your preference, or click **Display Settings** to access the control panel.





Function Key Combination

You can use the **Fn + F7** key combination to toggle through the display options:

- Notebook Only
- External Display Only
- Notebook + External Display

Make sure you give the displays enough time to refresh.

Multiple Display

At least one other display must be attached in order to view **Multiple Display** options.

Configuring from Intel® GMA Driver for Mobile

1. Go to the **Intel Graphics Properties** control panel (see *"Intel Graphics Properties" on page B - 2*) and click **Display Devices**.
2. Click to choose the display option from the **Multiple Display** menu.
3. Click **Apply** (and **OK** to confirm the settings change) and **OK** (button).

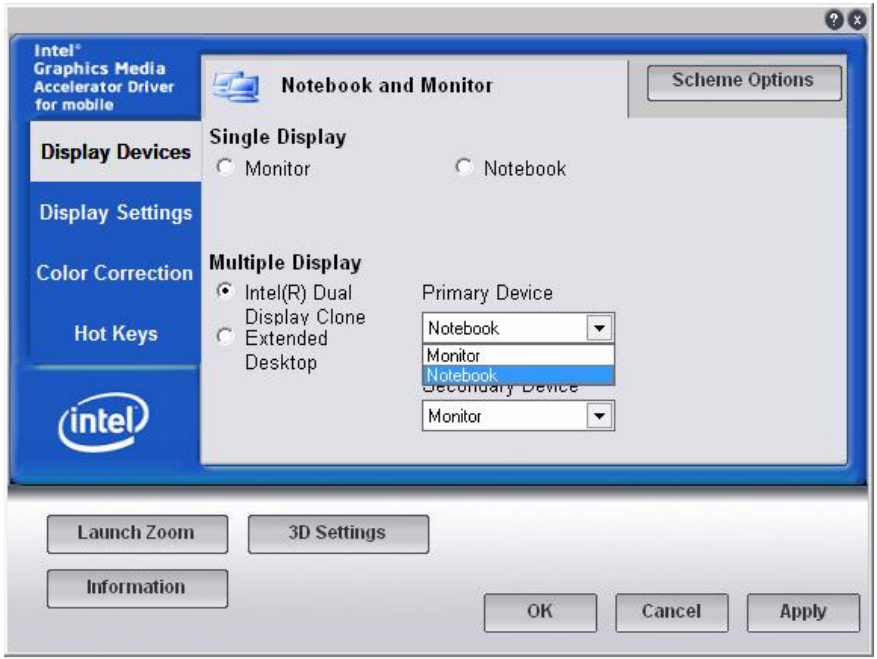


Figure B - 4
Display Devices

Display Modes

Single Display

Only one of your attached displays is used.

Intel(R) Dual Display Clone (mirrored)

This mode will drive multiple displays with the same content. Each device may be configured independently for different resolutions, refresh rates, color quality etc. Use this feature to display the screen through a projector for a presentation.

Extended Desktop (extended)

This mode allows a desktop to span multiple displays and acts as a large workspace. This creates a lot more screen area for display. Use the **Display Properties** control panel to drag the monitors to match the physical arrangement you wish to use, or you may also use the **Extended Desktop Settings** control panel tab in **Graphics Properties** to configure the relative size and position.

To Enable Intel(R) Dual Display Clone

1. Attach your external monitor to the external monitor port, and turn it on.
2. Go to the **Intel Graphics Properties** control panel (see *"Intel Graphics Properties" on page B - 2*) and click **Display Devices**.
3. Click to choose **Intel(R) Dual Display Clone (Multiple Display)**.
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.

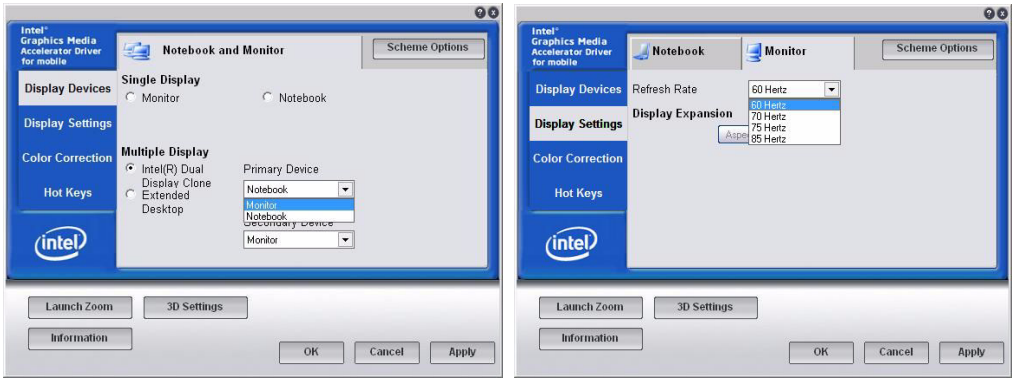
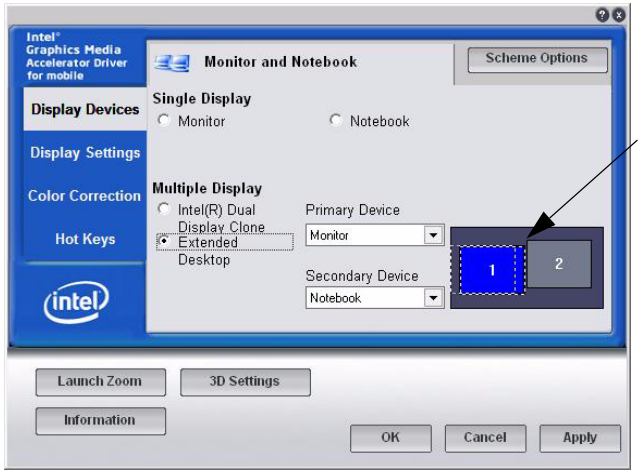


Figure B - 5
Display Devices & Settings

To Enable Extended Desktop

1. Attach your external monitor to the external monitor port, and turn it on.
2. Go to the **Intel Graphics Properties** control panel (see *"Intel Graphics Properties" on page B - 2*) and click **Display Devices**.
3. Click to choose **Extended Desktop (Multiple Display)**.
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.



Click the appropriate monitor icon and drag it to match the physical arrangement you wish to use (e.g. the secondary display may be extended left/right/above/below the primary display).

Click Display Settings to make any adjustments required.

Display Settings Extended Desktop

You can have different Colors, Screen Area and Monitor Refresh Rates for each display device **provided your monitor can support them**.

You can drag the monitor icons to match the physical layout of your displays. Icons and programs may also be dragged between the displays.

Figure B - 6
Extended Desktop Mode

Display Settings Extended Desktop

Use the control panel to drag the monitors to match the physical arrangement you wish to use.

You can drag any icons or windows across to either display desktop, which makes it possible to have one program visible in one of the displays, and a different program visible in the other display.

Using Windows Vista to Enable Extended Mode

1. Attach your external display to the external monitor port, and turn it on.
2. If a **New Display Detected** window does not appear in ***Windows Vista***, go to the **Windows Mobility Center** control panel (**Mobile PC > Adjust commonly used mobility settings**) and click ***Connect display***.
3. Click to select ***Show different parts of my desktop on each display (extended)***.
4. Click **Right** or **Left** under **Extend your desktop**.
5. Click **Apply > OK**.

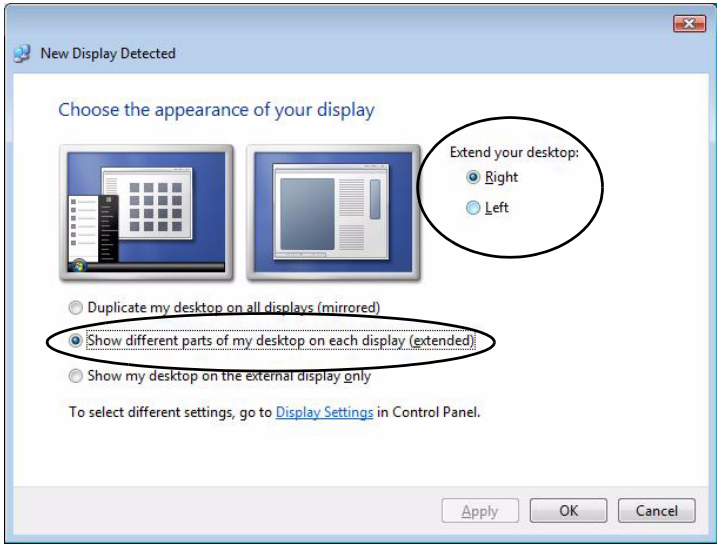
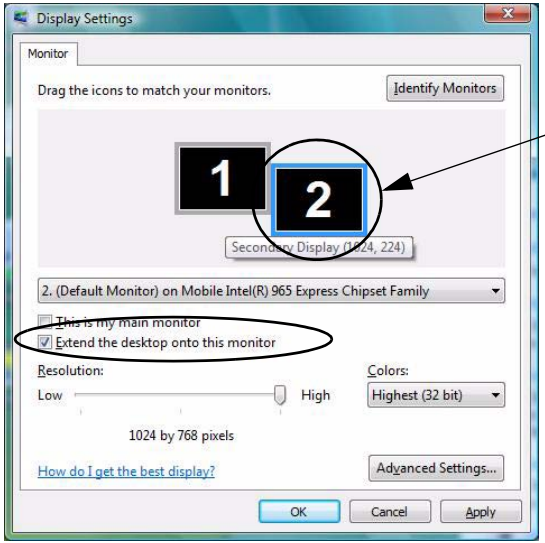

New Display Detected
Choose the appearance of your display
Extend your desktop:
Right
Left
Duplicate my desktop on all displays (mirrored)
Show different parts of my desktop on each display (extended)
Show my desktop on the external display only
To select different settings, go to Display Settings in Control Panel.
Apply
OK
Cancel

Figure B - 7
Display Properties (Extended Desktop)

Using Display Settings to Enable Extended Mode

1. Attach your external display to the external monitor port, and turn it on.
2. Open the **Display Settings** control panel (see *"Video Features" on page 1 - 16*).
3. Click the monitor icon (e.g. 2), and make sure you have checked "**Extend my Windows desktop onto this monitor**." and click **Apply**.



Click the appropriate monitor icon (e.g. 2) to be able to select the option to extend the desktop on to it.

In this example the Primary Display 1 is on the left, the Secondary Display 2 is on the right.

Figure B - 8
Display Properties (Extended Desktop)

B

Appendix C: Specifications

Latest Specification Information

The specifications listed in this Appendix are correct at the time of going to press. Certain items (particularly processor types/ speeds and CD/DVD device types) may be changed, delayed or updated due to the manufacturer's release schedule. Check with your service center for details.

Feature	Specification	
Processor	Intel® Core™2 Duo Processor (478-pin) Micro-FC-PGA Package - Socket-P **T7100**	65nm (65 Nanometer) Process Technology 2MB On-die L2 Cache & 800MHz FSB 1.8 GHz
	Intel® Core™2 Duo Processor (478-pin) Micro-FC-PGA Package - Socket-P **T7300/ T7500/ T7700**	65nm (65 Nanometer) Process Technology 4MB On-die L2 Cache & 800MHz FSB 2.0/ 2.2/ 2.4 GHz
Core Logic	Intel GM965+ICH8M Chipset	
LCD	12.1" WXGA (1280 * 800) Glare / Non Glare TFT LCD	
Memory	Dual Channel 64-bit Wide DDRII (DDR2) Two 200 Pin SO-DIMM Sockets Supporting **DDRII (DDR2**) **533MHz** - 512MB RAM Modules **OR 667MHz** - 512MB/1024MB RAM Modules Memory Expandable up to 2GB (512/1024 MB **DDRII** Modules)	
Video Adapter	**Intel GM965 Integrated Video** High Preference 3D/2D Graphic Accelerator Supports Dynamic Video Memory Technology DVMT (up to **256MB** dynamically allocated from system memory where needed) Supports DirectX 9 3D Graphics Engine Accelerator	
Security	Security (Kensington® Type) Lock Slot Fingerprint ID Reader Module (**Factory Option**)	BIOS Password Trusted Platform Module V1.2 (**Factory Option**)
BIOS	One 8Mb SPI Flash ROM	Phoenix™ BIOS

Feature	Specification	
Storage	One Changeable 12.7mm(h) Optical Device (CD/DVD) Type Drive (see *"Optional" on page C - 5*) Easy Changeable 2.5" 9.5 mm (h) **SATA** (Serial) HDD	
Audio	High Definition Audio (HDA) Compliant with Microsoft UAA (Universal Audio Architecture) Direct Sound 3D™ Compatible EAX™ 1.0 & 2.0 Compatible	A3D™ Compatible S/PDIF Digital Output 2 * Built-In Speakers Built-In Microphone
Keyboard & Pointing Device	Winkey Keyboard	Built-In TouchPad with Scrolling Function
Interface	Three USB 2.0 Ports One Headphone-Out Jack One Microphone-In Jack One S/PDIF Out Jack One Internal Microphone	One RJ-11 Modem Jack One RJ-45 LAN Jack One DC-In Jack One External Monitor Port One IEEE1394 Port
Card Reader	Embedded 7-in-1 Card Reader (MS/ MS Pro/ SD/ Mini SD/ MMC/ RS MMC/ MS Duo) **Note:** MS Duo/ Mini SD/ RS MMC Cards require a PC adapter	
ExpressCard Slot	One ExpressCard/34(54) Slot	

Feature	Specification
Communication *Note: The **Bluetooth**, **3.5G** and **Intel Turbo Memory Modules** (see *page A - 5*) cannot coexist. If one of these factory options is included in your purchase option, then the other two are **unavailable**.	10M/100Mb Base-T Ethernet LAN 56K MDC Modem V.90 & V.92 Compliant 802.11 a/b/g **OR** 802.11 a/g/n USB Wireless LAN Module (**Option**) 1.3M (UVC or non UVC) or 2.0M Pixel USB PC Camera Module (**Factory Option**) **Bluetooth OR 3.5G Module Options** (see sidebar and *page A - 5*): *Bluetooth 2.0 + EDR (Enhanced Data Rate) Module (**Factory Option**) **OR** *UMTS/HSPDA-based 3.5G Module with Mini Card Interface (**Factory Option**) Quad-band GSM/GPRS (850 MHz, 900 MHz, 1800 MHz, 1900 MHz) UMTS WCDMA FDD (2100 MHz)
Power Management	Supports ACPI 3.0 Supports Wake on LAN Supports Wake on USB Supports Resume from Modem Ring
Power	Full Range AC/DC Adapter AC input 100 - 240V, 50 - 60Hz, DC Output 19V, 3.42A (**65** Watts)
Battery	4 Cell Smart Lithium-Ion Battery Pack, 14.8V/2.4AH 8 Cell Smart Lithium-Ion Battery Pack, 14.8V/4.4AH (**Option**) RTC Battery
Environmental Spec	Temperature Operating: 5°C ~ 35°C Non-Operating: -20°C ~ 60°C Relative Humidity Operating: 20% ~ 80% Non-Operating: 10% ~ 90%

UMTS Modes

Note that UMTS modes CAN NOT be used in North America.

C

Feature	Specification	
Dimensions & Weight	299mm (w) * 219mm (d) * 26.5-35.7mm (h)	1.88 kg With 4 Cell Battery and ODD
Optional *Note: The **Bluetooth**, **3.5G and Intel Turbo Memory Modules** cannot co-exist. If one of these factory options is included in your purchase option, then the other two are **unavailable**.	**Optical Drive Module Options:** DVD/CD-RW Combo Drive Module DVD Dual Drive Module Super Multi Drive Module USB Floppy Disk Drive 802.11a/b/g USB Wireless LAN Module 802.11a/g/n USB Wireless LAN Module 8 Cell Smart Lithium-Ion Battery Pack Trusted Platform Module V1.2 (**Factory Option**) 1.3M (UVC or non UVC) or 2.0M Pixel USB PC Camera Module (**Factory Option**) Fingerprint ID Reader Module (**Factory Option**)	*Bluetooth 2.0 + EDR (Enhanced Data Rate) Module (**Factory Option**) **OR** *Intel Turbo Memory (Robson) NAND Flash Memory Card Module (**Factory Option**) **OR** *UMTS/HSPDA-based 3.5G Module with Mini Card Interface (**Factory Option**) Quad-band GSM/GPRS (850 MHz, 900 MHz, 1800 MHz, 1900 MHz) UMTS WCDMA FDD (2100 MHz) **UMTS Modes** Note that UMTS modes CAN NOT be used in North America.

Appendix D: Windows XP Information

This Appendix contains information (including control panel information, driver installation etc.) for users of the ***Windows XP OS***.

DVD Regional Codes

Changing DVD Regional Codes

Go to the **Control Panel** and double-click **System > Hardware** (tab), click **Device Manager**, then click the **+** next to **DVD/CD-ROM drives**. Double-click on the DVD-ROM device to bring up the **Properties** dialogue box, and select the **DVD Region** (tab) to bring up the control panel to allow you to adjust the regional code.

DVD region detection is device dependent, not OS-dependent. You can select your module's region code **5** times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

Region	Geographical Location
1	USA, Canada
2	Western Europe, Japan, South Africa, Middle East & Egypt
3	South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
4	South & Central America, Mexico, Australia, New Zealand
5	N Korea, Russia, Eastern Europe, India & Most of Africa
6	China

Table D - 1 **- DVD Region Codes**

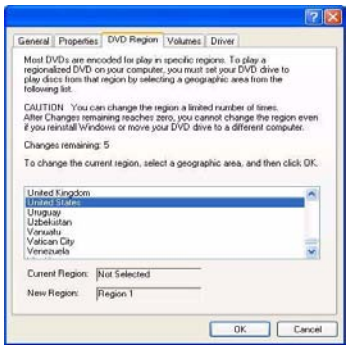

General
Properties
DVD Region
Volumes
Driver
Most DVDs are encoded for play in specific regions. To play a regionalized DVD on your computer, you must set your DVD drive to play discs from that region by selecting a geographic area from the following list.
CAUTION: You can change the region a limited number of times. After Changes remaining reaches zero, you cannot change the region even if you reinstall Windows or move your DVD drive to a different computer.
Changes remaining: 5
To change the current region, select a geographic area, and then click OK.
United Kingdom
United States
Uruguay
Uzbekistan
Vanuatu
Vatican City
Venezuela
Current Region:
Not Selected
New Region:
Region 1
OK
Cancel

Figure D - 1 **- DVD Regions**

Windows XP Start Menu & Control Panel

Most of the control panels, utilities and programs within ***Windows XP*** (and most other ***Windows*** versions) are accessed from the **Start** menu. When you install programs and utilities they will be installed on your hard disk drive, and a shortcut will usually be placed in the **Start** menu and/or the desktop. You can customize the look of the **Start** menu by right-clicking the **Start** menu and selecting **Properties** from the menu.

Figure D - 2 **- Start Menu & Control Panel**

In many instances throughout this manual you will see an instruction to open the **Control Panel**. The **Control Panel** is accessed from the **Start** menu, and it allows you to configure the settings for most of the key features in ***Windows*** (e.g. power, video, network, audio etc.). ***Windows XP*** provides basic controls for many of the features, however many new controls are added (or existing ones are enhanced) when you install the drivers. To see all controls it may be necessary to toggle off Category View.

TouchPad and Buttons/Mouse

The TouchPad is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports. The TouchPad buttons function in much the same way as a two-button mouse.

Once you have installed the TouchPad driver (see *"TouchPad" on page D - 31*) you can configure the functions by double-clicking the TouchPad driver icon on the **taskbar**. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensitivity options to your preferences. You will find further information at www.synaptics.com.

Mouse Driver

If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

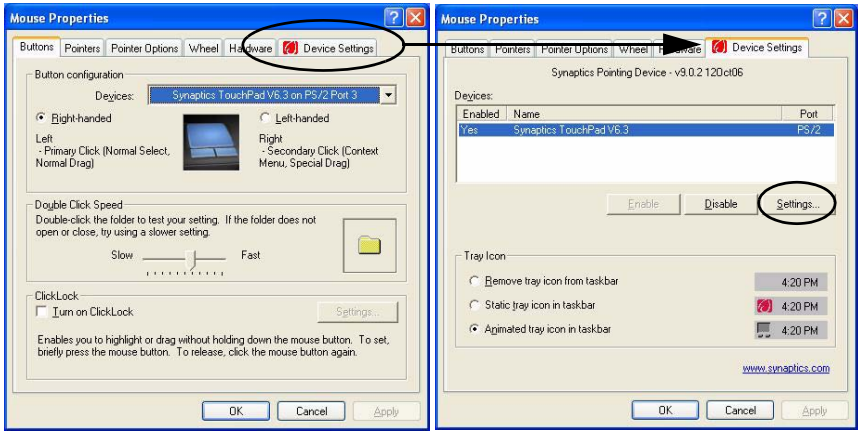


Figure D - 3 **- Mouse Properties**

Function Keys

The **function keys** (F1 - F12 etc.) will act as **hot keys** when pressed while the **Fn** key is held down. In addition to the basic function key combinations; visual indicators are available when the hot key utility is installed (see *"Hot Key" on page D - 31*). When the driver is installed, an icon will appear in the taskbar.

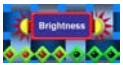
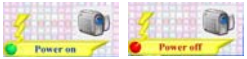
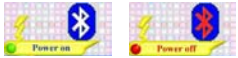
Keys	Function	Keys	Function
Fn + ~	Play/Pause (in Audio/Video Programs)	Fn + F7	Display Toggle
Fn +	3.5G Module Power Toggle	Fn + F8/F9	Brightness Decrease/Increase 
Fn + F1	TouchPad Toggle	Fn + F10	PC Camera Power Toggle 
Fn + F2	Turn LCD Backlight Off (Press a key to or use TouchPad to turn on)	Fn + F11	WLAN Module Power Toggle
Fn + F3	Mute Toggle	Fn + F12	Bluetooth Module Power Toggle 
Fn + F4	Sleep Toggle		*Silent Mode Toggle
Fn + F5/F6	Volume Decrease/Increase	*When enabled, **Silent Mode** will reduce fan noise and save power consumption. Note this may reduce computer performance.	

Table D - 2 **- Hot Key Functions & Indicators**

Audio Features

You can configure the audio options on your computer from the **Sounds and Audio Devices** ***Windows*** control panel, or from the **Realtek HD Audio Manager** icon in the taskbar/control panel (this will bring up the Realtek Audio Configuration menus). The volume may also be adjusted by means of the **Fn** + **F5/F6** key combination.

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within ***Windows*** (and the volume control function keys on the computer). Click the Volume icon on the taskbar to check the setting.

Figure D - 4 **- Realtek Audio Configuration Menus**

Video Features

Your computer has built-in **Intel** (**Intel GM965**) video. You can switch display devices, and configure display options, from the **Display Properties** control panel in ***Windows*** as long as the appropriate **video driver** is installed.

To access Display Properties in ***Windows***:

1. Click **Start**, point to **Settings** and click **Control Panel** (or just click **Control Panel**).
2. Double-click **Display** (icon) - In the **Appearances and Themes** category.
3. Click **Settings** (tab) in the **Display Properties** dialog box.
4. Move the slider to the preferred setting in **Screen resolution** 1 (*Figure D - 5 on page D - 8*).
5. Click the arrow, and scroll to the preferred setting in **Color quality** 2 (*Figure D - 5 on page D - 8*).
6. You can also access **Display Properties** by right-clicking the desktop and scrolling down and clicking **Properties**. Click **Settings** (tab) and adjust as above.
7. Open the **Display Properties** control panel, and click **Advanced** (button) 3 (*Figure D - 5 on page D - 8*) to bring up the Advanced properties tabs.
8. Click the **Intel(R) Graphics Media Accelerator Driver for Mobile** tab, and click **Graphics Properties** (button) to make any video adjustments you require.
9. You can also access **Graphics Properties** from the ***Windows*** **Intel(R) GMA Driver for Mobile** control panel, or from the taskbar icon .

Dynamic Video Memory Technology

Intel® DVMT automatically and dynamically allocates as much system memory (RAM) as needed to the video system (**the video driver must be installed**). DVMT returns whatever memory is no longer needed to the operating system.

Display & Graphics Properties

Taskbar Icon

You can also access the controller properties from the taskbar. Click on the icon to bring up the menu and scroll to **Graphics Properties**.

If you cannot see the tray icon go to the **Intel(R) Graphics Media Accelerator Driver for Mobile** tab and click the "**Show Tray Icon**" tickbox. Alternatively right-click the desktop and select **Graphics Options > Tray Icon > Enable**.

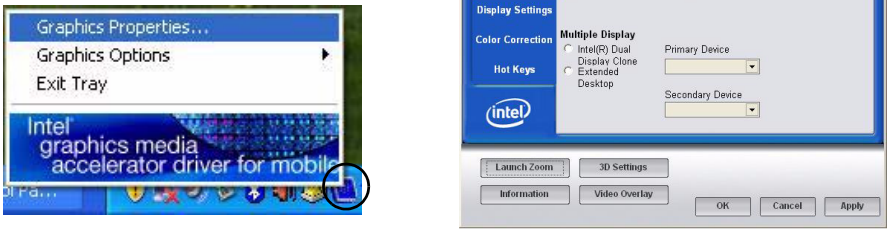
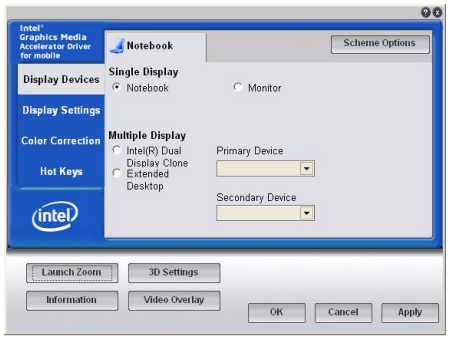
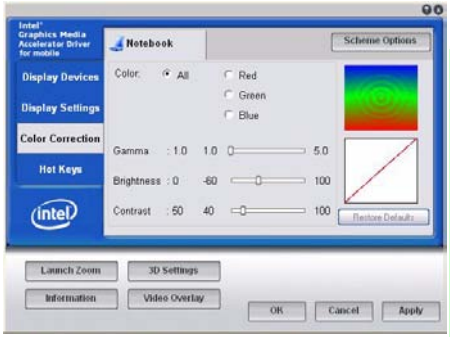
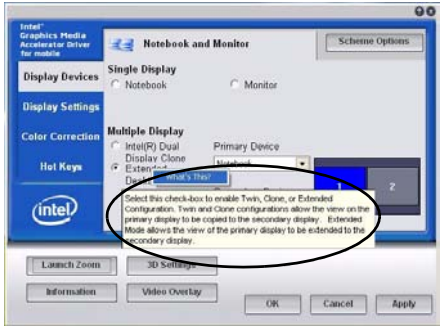


Figure D - 5 **- Display & Graphics Properties**

You may make changes to the devices, color, schemes, **Hot Keys** etc. by clicking the appropriate menu item or button. Click **Information** (button) to obtain useful information about the graphics properties of the computer, and see the **Support** tab in **Information** to get weblinks to the latest information on the Intel Website.







Function Key Combination

You can use the **Fn + F7** key combination to toggle through the display options:

- Notebook Only
- External Display Only
- Notebook + External Display

Make sure you give the displays enough time to refresh.

Intel Display Note

Note that the notebook is the default Primary display device and may not be changed.

Figure D - 6 **- Intel GMA Driver for Mobile**

Display Devices & Options

Besides the built-in LCD, you can also use an **external VGA monitor** (CRT) or **external Flat Panel Display** as your display device. A VGA monitor/Flat Panel Display connects to the external monitor port. The following display modes are available.

Intel Display Mode	Description
Single Display	One of the connected displays is used as the display device
Multiple Display - Intel(R) Dual Display Clone	Both connected displays output the same view and may be configured independently
Multiple Display - Extended Desktop	Both connected displays are treated as separate devices, and act as a virtual desktop

Figure D - 7 **- Display Options**

Switching Modes When Using the Power DVD Application

Switch display modes **before playing** any DVD in the **Power DVD Application** it is not be possible to switch display modes while a DVD is playing (you will be required to stop the DVD playing, switch display modes, then start the DVD playing again).

Attaching Other Displays

If you prefer to use a monitor or flat panel display, connect it to the external monitor port at the rear of the computer.

1. Attach your external display to the external monitor port, and turn it on.
2. Go to the **Intel GMA Graphics Properties** control panel and click **Display Devices**.
3. Click to choose the display option from the **Multiple/Single Display** menu.
4. Click **Apply**, and **OK** to confirm the settings change.

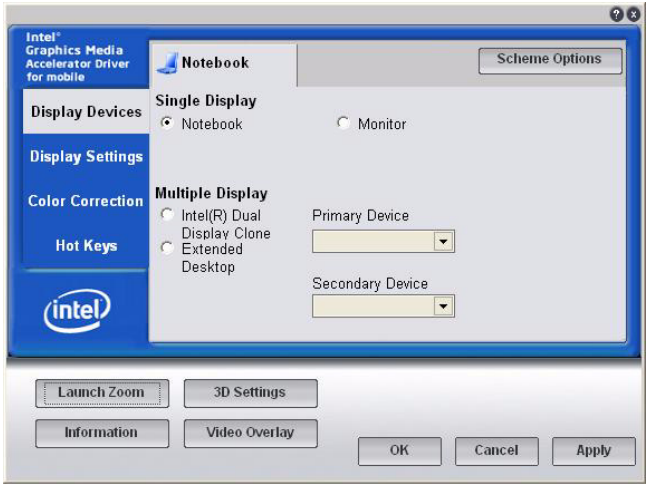


Figure D - 8 **- Display Devices**

To Enable Intel(R) Dual Display Clone (Intel GMA)

1. Attach your external display to the external monitor port, and turn it on.
2. Go to the **Intel GMA Graphics Properties** control panel and click **Display Devices**.
3. Click to choose **Intel(R) Dual Display Clone** (**Multiple Display**).
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.

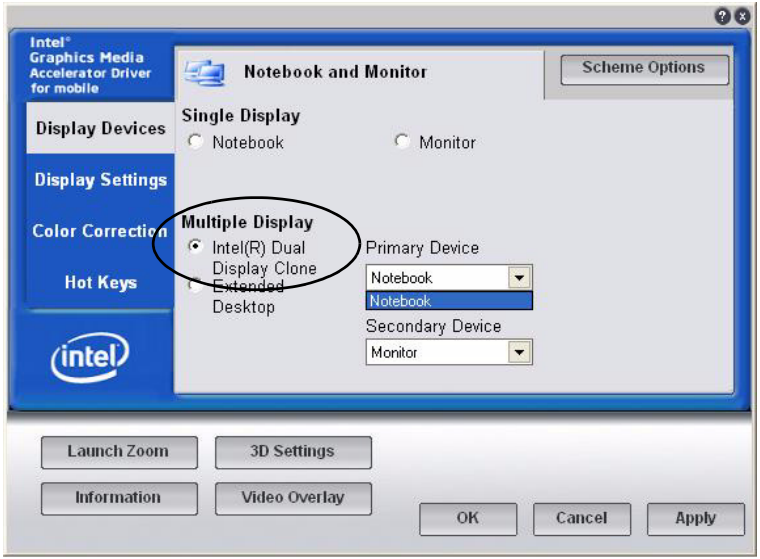
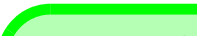


Figure D - 9 **- Display Devices - Intel(R) Dual Display Clone**

To Enable Extended Desktop (Intel GMA)

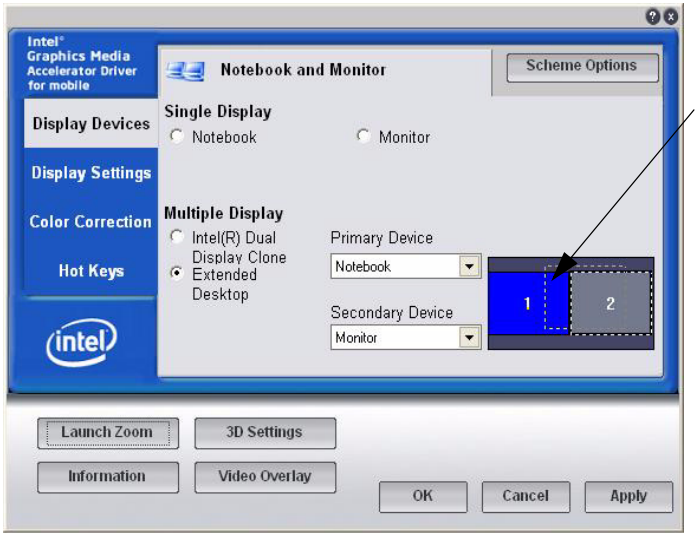
1. Attach your external display to the external monitor port, and turn it on.
2. Go to the **Intel GMA Graphics Properties** control panel and click **Display Devices**.
3. Click to choose **Extended Desktop** (**Multiple Display**).
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.



Display Settings Extended Desktop

You can have different Colors, Screen Area and Monitor Refresh Rates for each display device **provided your monitor can support them**.

You can drag the monitor icons to match the physical layout of your displays. Icons and programs may also be dragged between the displays.



Click the appropriate monitor icon and drag it to match the physical arrangement you wish to use (e.g. the secondary display may be extended left/right/above/below the primary display).

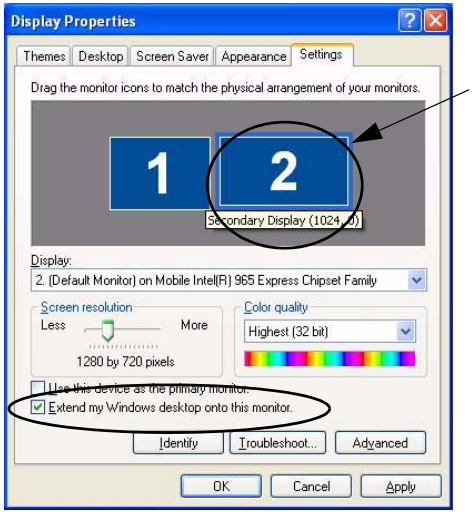
Click Display Settings to make any adjustments required.

Figure D - 10 **- Display Devices - Extended Desktop**

D

To Enable Extended Desktop (Windows Display Properties)

1. Attach your external monitor to the external monitor port, and turn it on.
2. Click **Start**, point to **Settings** (or click **Control Panel**) and click **Control Panel** (if you are in **Category View** choose **Appearance and Themes**).
3. Double-click **Display** (icon).
4. In the **Display Properties** dialog box, click **Settings** (tab).
5. Click the monitor icon (e.g. 2), and make sure you have checked "**Extend my Windows desktop onto this monitor**." and click **Apply**.



Click the appropriate monitor icon (e.g. 2) to be able to select the option to extend the desktop on to it.

In this example the Primary monitor 1 is on the left, the secondary display 2 is on the right.

Display Settings Extended Desktop

Use the control panel to drag the monitors to match the physical arrangement you wish to use.

You can drag any icons or windows across to either display desktop, which makes it possible to have one program visible in one of the displays, and a different program visible in the other display.

Figure D - 11 **- Display Properties (Extended Desktop)**

Power Management Features

To conserve power, especially when using the battery, your computer uses the ACPI power management system. Power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system.

The **Power Options** control panel icon in ***Windows*** (see page ***D - 3***) allows you to configure power management features for your computer. You may conserve power through individual components such as the monitor or hard disk, or you may use either **Stand by** or **Hibernate** mode to conserve power throughout the system.

Advanced Configuration and Power Interface

The **ACPI** interface provides the computer with enhanced power saving techniques and gives the operating system (OS) direct control over the power and thermal states of devices and processors. For example, it enables the OS to set devices into low-power states based on user settings and information from applications. ACPI is fully supported in *Windows XP*.

OS Note

Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.

(**Note**: All pictures used on the following pages are from the ***Windows XP*** OS.)

The Power Sources

The computer can be powered by either an AC/DC adapter or a battery pack.

AC/DC Adapter

Use only the AC/DC adapter that comes with your computer. The wrong type of AC/DC adapter will damage the computer and its components.

1. Attach the AC/DC adapter to the DC-in jack on the left of the computer.
2. Plug the AC power cord into an outlet, and then connect the AC power cord to the AC/DC adapter.
3. Raise the lid/LCD to a comfortable viewing angle.
4. Press the power button to turn “On”.

Battery

The battery allows you to use your computer while you are on the road or when an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. **To increase battery life, let the battery discharge completely before recharging** (see ***“How do I completely discharge the battery?” on page D - 26***).

We recommend that you do not remove the battery. For more information on the battery, please refer to ***“Battery Information” on page D - 23***.

Turning on the Computer

Now you are ready to begin using your computer. To turn it on simply press the power button on the front panel.

When the computer is on, you can use the power button as a Stand by/Hibernate/Shutdown hot-key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will shut the computer down). Use **Power Options** in the ***Windows*** control panel to configure this feature.

Forced Off

If the system "hangs", and the **Ctrl + Alt + Del** key combination doesn't work, press the power button for **4 seconds**, or longer, to force the system to turn itself off.

Power Button as Stand by or Hibernate Button

If you are using a fully ACPI-compliant OS, (such as Windows XP) you can use the OS's "Power Options" control panel to set the power button to send the system into Stand by or Hibernate mode (see your OS's documentation, or ***"Configuring the Power Button" on page D - 22*** for details).

Shutdown

Note that you should always shut your computer down by choosing the **Turn Off Computer** command from the **Start** menu in ***Windows***. This will help prevent hard disk or system problems.

Resuming Operation

Press a key on the keyboard, or move the mouse/TouchPad to resume from Monitor or Hard Disk Stand by.

Power Schemes

You can set your computer to conserve power through individual components by means of **Power Schemes**. You can also adjust the settings for each scheme to set the monitor to turn off after a specified time, and the computer's hard disk motor to turn off if the hard disk drive has not been accessed for a specified period of time (if the system reads or writes data, the hard disk motor will be turned back on). The schemes may also be set to set a specified time for the system to enter **Stand by** or **Hibernate** modes (see *"System Power Options" on page D - 20*).

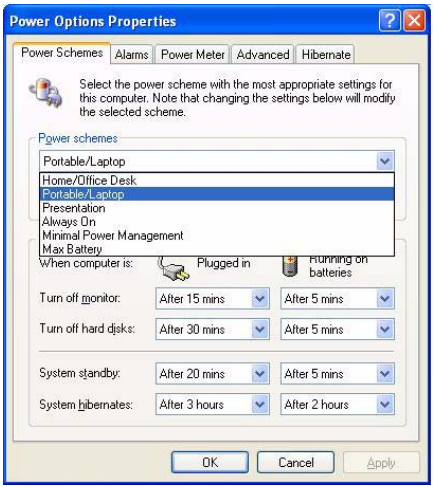


Figure D - 12
Power Schemes

Each ***Windows*** **Power Scheme** will also adjust the processor performance of your machine in order to save power. This is worth bearing in mind if you are experiencing any reduced performance (especially under DC/battery power).

Choose the **Home/Office Desk** scheme for maximum performance when the computer is powered from an AC power source. Choose the **Max Battery** scheme (bear in mind that this scheme may slow down the overall performance of the computer in order to save power) for maximum power saving when the computer is battery (DC power) powered. ***Windows*** will use **Portable/Laptop** as the default scheme.

Stand by/Hibernate or Shutdown Error

The computer may stop responding when you put it into (or resume from) Stand By or Hibernate, or when you shut down.

This error is caused by power management within ***Windows XP***, when applied to a **PC Camera** attached to the internal USB hub.

Microsoft has posted a Hotfix for this error on its website (search for Hotfix KB909667).

Download and install the Hotfix to correct this error.

System Power Options

You can use the system power options to stop the computer's operation and restart where you left off. This system features **Stand by** and **Hibernate** sleep mode levels (**Hibernate** mode will need to be enabled by clicking the option in the **Hibernate** tab in the **Power Options** control panel - see ***"Hibernate" on page D - 21***).

Hibernate Mode vs. Shutdown

Hibernate mode and Shutdown are the same in that the system is off and you need to press the power button to turn it on. Their main difference is:

When you come back from hibernation, you can return to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

You can use either method depending on your needs.

Stand by Mode vs. Hibernate Mode

If you want to stay away from your work for just a while, you can put the system on Stand by instead of in hibernation. It takes a longer time to wake up the system from **Hibernate** mode than from **Stand by** mode.

Stand by

Stand by saves the least amount of power, but takes the shortest time to return to full operation. During Stand by the hard disk is turned off, and the CPU is made to idle at its slowest speed. All open applications are retained in memory. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter Stand by mode to save power.

Hibernate

Hibernate uses no power and saves all of your information on a part of the HDD before it turns the system off. Although it saves the most power it takes the longest time to return to full operation. You can set your computer to automatically enter Hibernate mode when the battery power is almost depleted. You will need to enable Hibernate mode from the **Hibernate** tab in the Power Options control panel. **The system will resume from Hibernate mode by pressing the power button**.

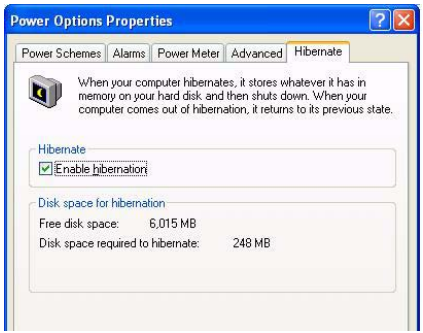

Power Options Properties
Power Schemes
Alarms
Power Meter
Advanced
Hibernate
When your computer hibernates, it stores whatever it has in memory on your hard disk and then shuts down. When your computer comes out of hibernation, it returns to its previous state.
Hibernate
Enable hibernation
Disk space for hibernation
Free disk space: 6,015 MB
Disk space required to hibernate: 248 MB

Figure D - 13
Enable Hibernation

System Resume

The system can resume from Stand by mode by:

- Pressing the power button
- Pressing the **Sleep/ Resume** key combination
- An incoming call received on the modem (if enabled)
- Network card (Wake On LAN) activity (if enabled)

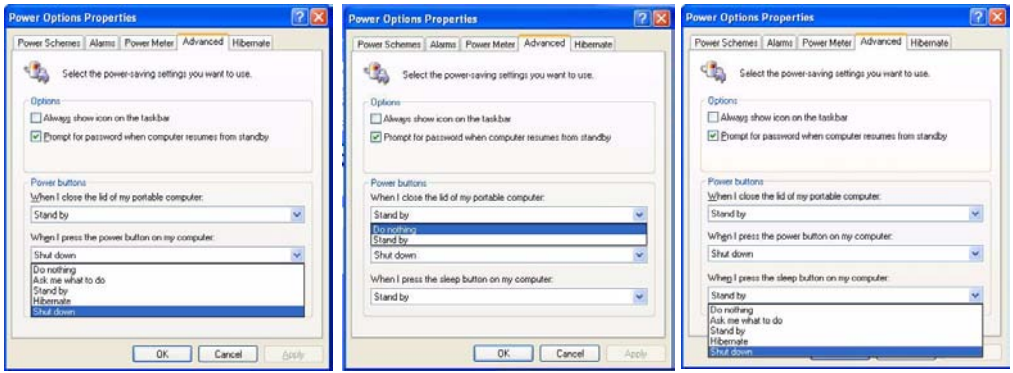
D

Sleep Button

You may also configure the **Sleep/Resume** key combination (**Fn + F4**) from the menu illustrated. In ***Windows*** this is referred to as the **Sleep** button.

Configuring the Power Button

The power button may be set to send the computer in to either **Stand by** or **Hibernate** mode. In **Stand by** mode, the LED will blink green. In **Hibernate** mode the LED will be off (battery) or orange (AC/DC adapter). If you are in a power saving mode set to save power through individual components (e.g. hard disk, monitor), the LED will remain green.



Power Button | Lid | Sleep/Resume (Sleep) Button

Figure D - 14
Power Options (Advanced - Power Buttons)

Battery Information

Please follow these simple guidelines to get the best use out of your battery.

New Battery

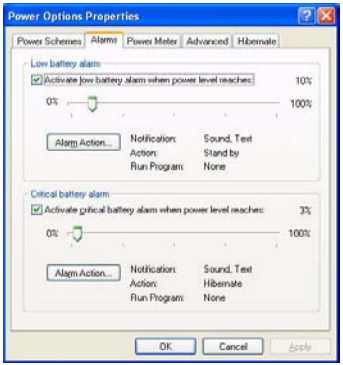
Always completely discharge, then fully charge, a new battery (see *"Battery FAQ" on page D - 26* for instructions on how to do this).

Battery Life

Your computer's battery life is dependent upon many factors, including the programs you are running, and peripheral devices attached. **Power Options** (you may set low battery **Alarms** and actions, and check the **Power Meter** from the **Power Options** control panel), and settings in the OS will help prolong the battery life if configured appropriately.

Low Battery Warning

When the battery is critically low, immediately connect the AC/DC adapter to the computer or save your work, otherwise, the unsaved data will be lost when the power is depleted.



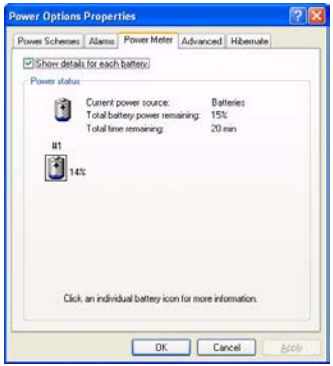


Figure D - 15
Power Options (Alarm & Power Meter)

D

Battery life may be shortened through improper maintenance. **To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days**.

We recommend that you do not remove the battery yourself. If you need to remove the battery for any reason, see ***"Removing the Battery" on page 6 - 3***.

Recharging the Battery with the AC/DC Adapter

The battery pack automatically recharges when the AC/DC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is less. (Refer to ***"LED Indicators" on page 1 - 7*** for information on the battery charge status, and to ***"Battery Information" on page D - 23*** for more information on how to maintain and properly recharge the battery pack.)

Conserving Battery Power

To conserve battery power:

Lower the brightness level of the LCD display. The system will decrease LCD brightness slightly to save power when it is not powered by the AC/DC adapter.

Close modem or communication applications when they are not being used.

Remove any unused PC Cards from the computer (PC Cards quickly use up battery power even if the system enters sleep mode).

Disconnect any unnecessary external devices.

Proper handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances
- DO NOT expose the battery to fire or high temperatures, it may explode
- DO NOT connect the metal terminals (+, -) to each other

Damaged Battery Warning

Should you notice any physical defects (e.g. the battery is bent out of shape after being dropped), or any unusual smells emanating from the notebook battery, shut your computer down immediately and contact your service center. If the battery has been dropped we do not recommend using it any further, as even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire. It is recommended that you replace your computer battery every two years.

Caution

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery FAQ

How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer by yourself even when you see a message that indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own. Disable the **Power Options** functions in the **Control Panel**, especially any **Alarms** (**unclick** the tickboxes - see page ***D - 23***) and **Schemes** (change all the settings to **Never** - see page ***D - 18***). As the battery nears the end of its life save and close any critical files.

How do I fully charge the battery?

When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?

Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Driver Installation

Insert the ***Device Drivers & Utilities + User's Manual CD-ROM***, click ***Install Drivers/Option Drivers*** (button) and then click the appropriate driver name from the ***Drivers Installer*** menu. Follow the instructions to install the driver. Alternatively click **Start**, navigate (**Browse..**) to the executable file and then follow the manual setup instructions.

1. Check the driver installation order from ***Table 5*** (**the drivers must be installed in this order**) which is the same as that listed in the ***Drivers Installer*** menu below.
2. Click to select the driver you wish to install, after installing each driver it will become greyed out (if you need to reinstall any driver, click the **Unlock** button).
3. Follow the instructions for each individual driver installation procedure as listed on the following pages.

Figure 5 **- Drivers Installer Screen 1**

Figure 6 **- Drivers Installer Screen 2**

WinXP SP2 Driver	Page #	Driver Location	Notes
Chipset	*Page D - 30*	X:\Drivers\Chipset\Setup.exe	**Manual Driver Installation** If you wish to install the drivers manually, click the **Exit** button to quit the ***Drivers Installer*** application, and then browse to the executable file in the location listed in this table, and follow the installation procedure for each driver. **Note that X is the drive letter assigned to the CD/DVD-ROM drive**.
Video (VGA)	*Page D - 30*	X:\Drivers\Video\Setup.exe	
Audio	*Page D - 30*	X:\Drivers\Audio\Setup.exe	
Modem	*Page D - 30*	X:\Drivers\Modem\ssetup.exe	
LAN	*Page D - 30*	X:\Drivers\Lan\setup.exe	
TouchPad	*Page D - 31*	X:\Drivers\TouchPad\WinWDF\x86\dpinst.exe	
CardReader	*Page D - 31*	X:\Drivers\CardReader\Setup.exe	
Hot Key	*Page D - 31*	X:\Drivers\Hotkey\Setup.EXE	
PC Camera Module	*Page D - 32*	X:\Drivers\Options\Camera\Sertek\UVC\setup.exe (for 1.3M pixel Camera) X:\Drivers\Options\Camera\Sertek\nonUVC\Setup.exe (for 1.3M pixel Camera) X:\Drivers\Options\Camera\Dmax\Setup.exe (for 2.0M pixel Camera)	
WLAN Module	*Page D - 39* *Page D - 40*	X:\Drivers\Options\WLAN\Intel\Autorun.exe (Intel WLAN) X:\Drivers\Options\WLAN\GU-700\Setup.exe (Realtek WLAN)	
Bluetooth Module	*Page D - 41*	X:\Drivers\Options\Bluetooth\Setup.exe	
3.5G Module	*Page D - 45*	X:\Drivers\Options\3G\DriverInstaller\DriverInstaller.exe	
Fingerprint Reader Module	*Page D - 47*	X:\Drivers\Fingerprint\Application\x86\autorun.exe	
TPM Security Chip	*Page D - 50*	X:\Drivers\Options\TPM\setup.exe	

Table 5 **- Driver Installation**

Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver.To do this go to the **Control Panel** in the ***Windows OS*** and double-click the **Add/Remove Programs** item. **If you see the individual driver listed** (if not see below), uninstall it, following the on screen prompts (it may be necessary to restart the computer). Go to the appropriate section of the manual to complete the update/reinstall procedure for the driver in question.

If the driver is not listed in the **Add/Remove Programs** item:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Start > Control Panel**).
2. Double-click **System** (icon); System (icon) is in **Performance and Maintenance** (category).
3. Click **Hardware** (tab) > **Device Manager** (button).
4. Double-click the **device** you wish to update/reinstall the driver for (you may need to click "+").
5. Look for the **Update Driver** button (check the **Driver** tab) and follow the on screen prompts.

Windows XP Service Pack 2

Make sure you install **Windows XP Service Pack 2** (or a Windows XP version which includes Service Pack 2) **before installing any drivers**. Service Pack 2 includes support for **USB 2.0**.

If you have **upgraded** the system by installing **Service Pack 2** (i.e. your Windows XP version does not include Service Pack 2) then follow these instructions:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **System** (icon); **System** (icon) is in **Performance and Maintenance** (category).
3. Click the **Hardware** (tab) > **Device Manager** (button).
4. Click "+" next to **Other Devices** (if its sub-items are not shown).
5. Right-click **Universal Serial Bus (USB) Controller** and select **Uninstall > OK** (if you don't see the item then there is no need to take any further action).
6. Restart the computer and it will find the USB 2.0 controller.

Driver Installation Procedure

Chipset

1. Click **1.Install Chipset Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Video (VGA)

1. Click **2.Install VGA Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Audio

1. Click **3.Install Audio Driver > Yes**.
2. Click **Next**.
3. Click **Finish** to restart the computer.

Modem

1. Click **4.Install Modem Driver > Yes**.
2. Click **OK**.
3. The modem is ready for dial-up configuration.

Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel** > **Phone and Modem Options**).

LAN

1. Click **5.Install LAN Driver > Yes**.
2. Click **Next**.
3. Click **Install > Finish**.
4. The network settings can now be configured.

TouchPad

1. Click **6.Install Touchpad Driver > Yes**.
2. Click **Next > Finish**.
3. Click **Yes** to restart the computer.

CardReader

1. Click **7.Install Cardreader Driver > Yes**.
2. Click **Next > Next**.
3. Click **Finish** to restart the computer.

Hot Key

1. Click **8.Install HOTKEY Utility > Yes**.
2. Click **Next > Install**.
3. Click **Finish > Finish** to restart the computer.

Module Drivers

See the following pages for the driver installation procedures for any of the optional modules included in your purchase configuration.

Wireless LAN, Bluetooth & 3.5G Modules

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are **OFF** if you are using the computer aboard aircraft.

Wireless LAN, Bluetooth & 3.5G Modules Power Toggle

Enable power to the modules as follows:

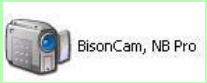
Fn + F11 = Wireless LAN Module Power Toggle
Fn + F12 = Bluetooth Module Power Toggle
Fn + = 3.5G Module Power Toggle

The LED indicator will be **green** if the WLAN module is on, and **orange** if the Bluetooth module is on. The LED indicator will be **green** if the 3.5G module is on.

Taking Still Pictures

Double-click the **My Computer** icon on the desktop, or go the **Start** menu and point to **My Computer**, then click it.

Double-click the **BisonCam, NB Pro** icon.



Click **Take a new picture** in the **Camera Tasks** box.

PC Camera Module

Before installing the optional **PC Camera** module driver use the **Fn + F10** key combination to toggle power to the module. There are **3** camera options available for this computer, depending on your purchase configuration. The **1.3M pixel camera** module has both **UVC** (USB Video Class) and non UVC options, and uses the **BisonCap** application to capture video files. The **2.0M pixel camera** module uses the **Video View** application to capture video files.

PC Camera Driver Installation

1. Make sure the module is powered on, and then insert the ***Device Drivers & Utilities + User's Manual CD-ROM*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **1.PC Camera, Web cam > Yes**.

For the 1.3M Pixel Camera Module (UVC and **non UVC):**

1. Choose the language you prefer and click **Next > Next**.
2. Click **Finish** to restart the computer.
3. Run the **BisonCap** application program from the **BisonCam** shortcut on the desktop, or from the **BisonCam** item in the **Start > Programs/All Programs** menu (if the hardware is turned off use the **Fn + F10** key combination to turn it on again).

For the 2.0M Pixel Camera Module:

1. Click **Install**.
2. Click to select **Yes** or **No** in answer to the power system question.
3. Click to select **Yes** or **No** to enable/disable the **Digital Zoom** function.
4. Click **Finish** > **Finish** to restart the computer.
5. Run the **Video View** application program from the **Video View** shortcut on the desktop, or from the **USB2.0 PC Camera** item in the **Start** > **Programs/All Programs** menu (if the hardware is turned off use the **Fn + F10** key combination to turn it on again).

PC Camera Audio Setup (all camera modules)

If you wish to capture video & **audio** with your camera, it is necessary to setup the audio recording options in ***Windows***.

1. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Sounds & Audio Devices** icon (**Sounds, Speech, and Audio Devices** in Category View).
2. Click **Advanced** in the **Volume > Device volume** tab.
3. Click **Options** and scroll down and click **Properties**.
4. Select **Realtek HD Audio input** from the **Mixer device** menu.
5. Make sure the **Mic Volume** (check box) is checked, then click **OK**.
6. Boost the volume in the **Recording** section (in the Recording Control menu) as high as it will go.
7. Close the **Recording Control** window, and then click **OK**.
8. Run the **BisonCap/Video View** application program from the **Start > Programs/All Programs > BisonCam/ USB2.0 PC Camera** menu.
9. Go to the **Devices** menu heading and select **Realtek HD Audio input** (it should have a tick alongside it).
10. Go to the **Capture** menu heading and select **Capture Audio** (it should have a tick alongside it).

Pre-Allocating File Space

You may pre-allocate the file size for the capture file in the **BisonCap** program. You can choose to ignore this by clicking **Cancel**.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

You may find it helpful to defragment the HDD before capture.

BisonCap (for 1.3M pixel camera modules)

BisonCap is a video viewer useful for general purpose video viewing and testing, and can capture video files to .avi format.

1. Run the **BisonCap** application from the **Start > Programs/All Programs > Bison-Cam** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check ***"PC Camera Audio Setup (all camera modules)" on page D - 33***) and select **Start Capture**.
3. On the first run of the program (if you have not set the captured file) you will be asked to choose a file name and size (**see the sidebar - Pre-Allocating File Space**) for the captured file. Click **Start Capture** again.
4. Click **OK** to start capturing the video, and press **Esc** to stop the capture.
5. If you wish to, you may go to the **File** menu and select **Save Captured Video As...**, choose a file name and location, and then click **Open** (you can view the file using the **Windows Media Player**).

Set Capture File

In the **BisonCap** program you will only be asked to set the capture file name on the first run of the program. When you run the program the next time the file will automatically be overwritten with the newly captured file. To avoid overwriting files you can go to the **Set Capture File..** option in the **File** menu, and set the file name and location before capture. Set the name and location then click **Open** (you can choose **Cancel** to ignore the file size if prompted).

Eliminating Screen Flicker (BisonCap)

If you find that the video screen in the **BisonCap** program is flickering, you can try to adjust the setting in the **Video Capture Filter** options.

1. Run the **BisonCap** application.
2. Go to **Options** and scroll down to select "**Video Capture Filter...**".
3. Click either **50Hz** or **60Hz** under **Frequency** in **Property Page** (tab).

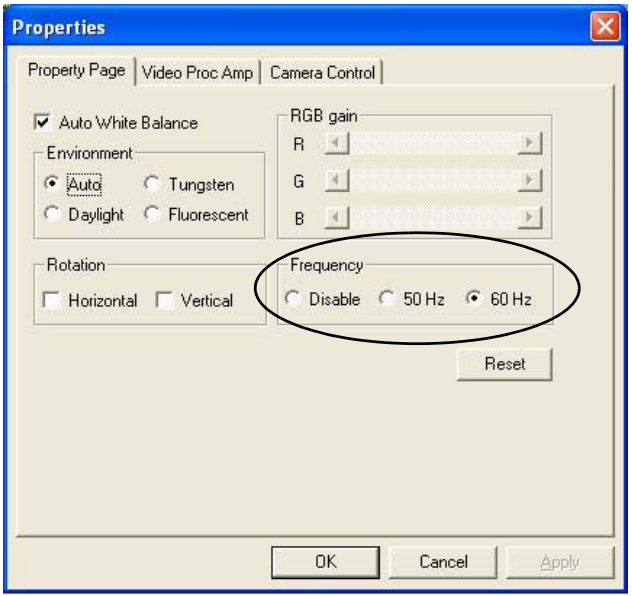


Figure D - 1
Video Capture Filter

Pre-Allocating File Space

You may pre-allocate the file size for the capture file in the **Video View** program.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

Video View (for 2.0M pixel camera module)

Video View is a video viewer useful for general purpose video viewing and testing, and can capture video files to .avi format.

1. Run the **Video View** program from the **Start > Programs/All Programs > USB2.0 PC Camera** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check ***"PC Camera Audio Setup (all camera modules)" on page D - 33***) and select **Start Capture**.
3. Click **OK** (the file location will be displayed in the pop-up box) to start capturing the video, and press **Esc** to stop the capture.

Set Capture File

Prior to capturing video files you may **Set Capture File..**. To avoid overwriting files you can go to the **Set Capture File..** option in the **File** menu, and set the file name and location before capture. Set the name and location then click **Open** (you can choose **Cancel** to ignore the file size if prompted).

Eliminating Screen Flicker (Video View)

If you find that the video screen in the **Video View** program is flickering, you can try to adjust the setting in the **Video Capture Filter** options.

1. Run the **Video View** program.
2. Go to **Options** and scroll down to select **Video Capture Filter...**.
3. Click either **50Hz** or **60Hz** under **Flickering Reduction** in **Image** (tab).

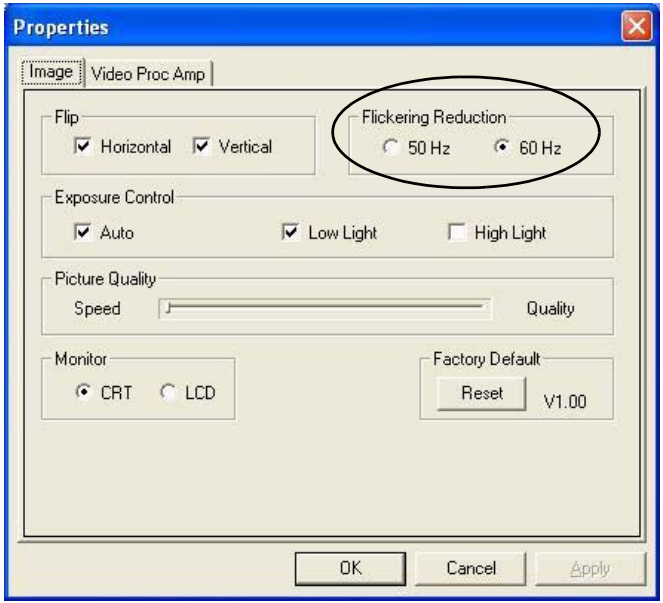


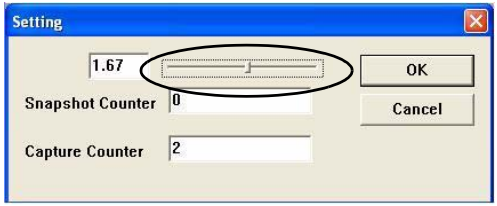
Figure D - 2
Video Capture Filter

Zoom (Video View)

If you have enabled digital zoom when installing the **2.0M Pixel Camera** driver you may use the **Options** > **Setting** menu to zoom the camera in and out.

1. Run the **Video View** program.
2. Go to **Options** and scroll down to select **Setting**.
3. Use the slider to adjust the zoom level, and click **OK** to save the setting.

Figure D - 3
Setting



Still Image Capture (Video View)

You can capture still images by using the **Snapshot** command from the **Capture** menu.

1. Run the **Video View** program.
2. Go to **Capture** and select **Snapshot**.
3. The picture (in JPEG format) will be placed in the **Snapshot** folder on the desktop.

Snapshot Folder

The Snapshot folder's default location is on the desktop. Do not move this folder or an error may appear when you try to take a still picture.

If you accidentally delete or move the folder, you can create a new Snapshot folder on the desktop in order to capture the files.

Figure D - 4
Snapshot Folder

D

WLAN Module

Before installing the Wireless LAN driver use the **Fn + F11** key combination to toggle power to the module. Your installation procedure will be dependent upon which WLAN module is included in your purchase option.

Intel WLAN Driver Installation

1. Make sure the module is powered on, then insert the ***Device Drivers & Utilities + User's Manual CD-ROM(WinXP)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Wireless Lan > Yes**.
4. Click **Next > Finish**.
5. Click **OK** to complete the installation.
6. Configure the settings by going to the **Intel (R) PROSet Wireless** control panel (**Start > Programs/ All Programs > Intel PROSet Wireless**), or by double-clicking the taskbar icon .

User Guide

You can view the User Guides from the ***Device Drivers & Utilities + User's Manual CD-ROM (WinXP)***.

Click **Option Drivers** and then click the **Unlock** button. Click **2.Wireless Lan > Yes**. Click **View User Guide** (button).

Figure D - 5 **- Intel PROSet/Wireless**

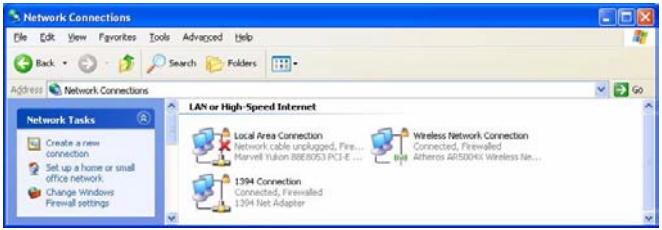
Network Connection

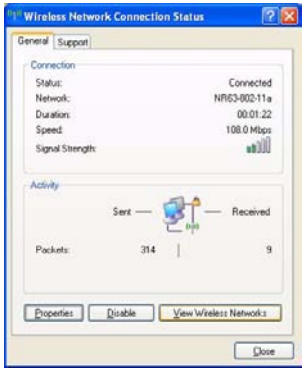
Use the ***Windows* Network Connections** control panel to access available wireless networks (**Start > Settings > Network Connections** or **Start > Connect To > Show all Connections**).

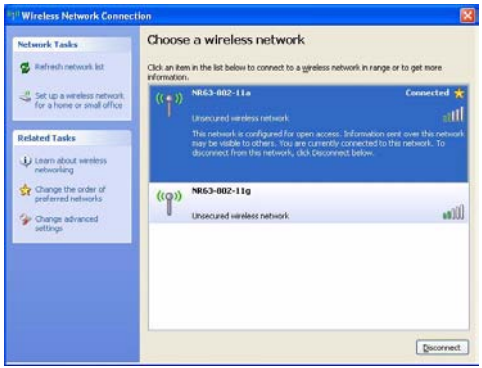
Figure D - 6
Wireless Network Control Panels

Realtek RTL 8187 Driver Installation

1. Make sure the module is powered on, then insert the ***Device Drivers & Utilities + User's Manual CD-ROM(WinXP)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Wireless Lan > Yes**.
4. Click **Next > Finish** to complete the installation.






Wireless Network Connection
Network Tasks
Refresh network list
Set up a wireless network for a home or small office
Related Tasks
Learn about wireless networking
Change the order of preferred networks
Change advanced settings
Choose a wireless network
Click an item in the list below to connect to a wireless network in range or to get more information
NR63-802-11a
Connected
Unsecured wireless network
This network is configured for open access. Information sent over this network may be visible to others. You are currently connected to this network. To disconnect from this network, click Disconnect below.
NR63-802-11g
Unsecured wireless network
Disconnect

Bluetooth Module

Before installing the optional **Bluetooth** module driver use the **Fn + F12** key combination to toggle power to the module.

Bluetooth Driver Installation

1. Make sure the module is powered on, and then insert the ***Device Drivers & Utilities + User's Manual CD-ROM*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **3.Bluetooth** (button).
4. Click **Install Software Drivers v2.3.0.1**.
5. Choose the language you prefer, and click **OK**.
6. Click **Next**.
7. Click the button to accept the license agreement, then click **Next**.
8. Click **Next** > **Next** > **Install**.
9. Click **Finish**.
10. The **IVT Corporation BlueSoleil - Main Window** screen appears on restart.
11. You can configure the settings at any time by going to the **IVT Corporation BlueSoleil - Main Window** control panel (**Start** > **Programs/All Programs** > **IVT BlueSoleil**), or by clicking the taskbar icon .
12. View the BlueSoleil User Guides from the **Help** Menu (press **F1**) in the **IVT Corporation BlueSoleil - Main Window** control panel.

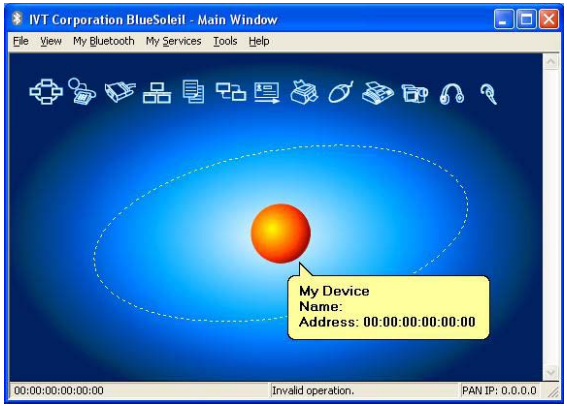
Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are OFF if you are using the computer aboard aircraft.

Use the **Fn + F12** key combination to toggle power to the Bluetooth module, and check the indicator to see if the module is powered on or not (see ***Table 1 - 5, on page 1 - 10***/ ***Table 1 - 2, on page 1 - 7***).

User Guide

View the BlueSoleil User Guides (Contents and Index) from the **Help** menu (or press the **F1** key) in the **IVT Corporation BlueSoleil - Main Window** control panel. Click **BlueSoleil User Guides** in the **Contents** tab, and click to select the appropriate User Guide from the panel on the right.



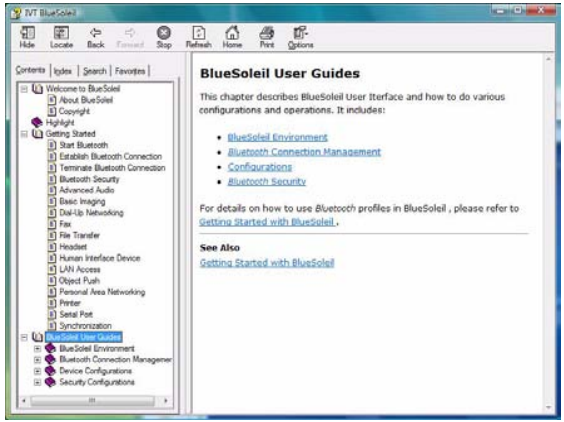
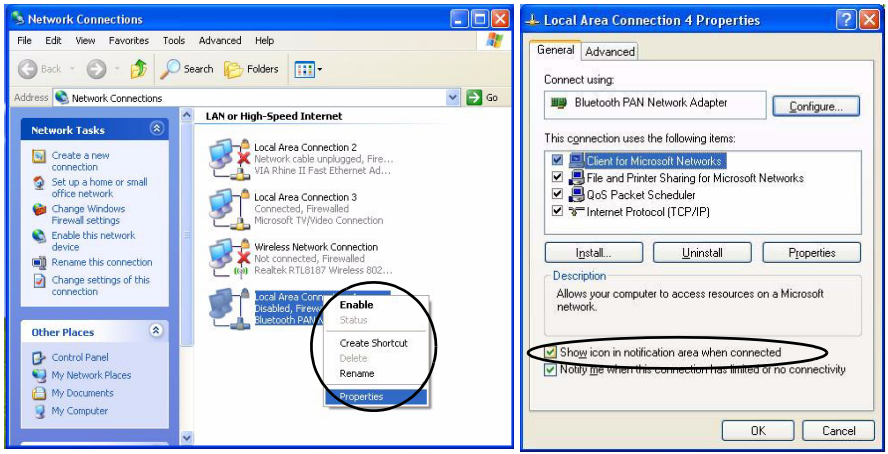

IVT BlueSoleil
Hide Locate Back Forward Stop Refresh Home Print Options
Contents Index Search Favorites
BlueSoleil User Guides
This chapter describes BlueSoleil User Iterface and how to do various configurations and operations. It includes:
BlueSoleil Environment
Bluetooth Connection Management
Configurations
Bluetooth Security
For details on how to use Bluetooth profiles in BlueSoleil , please refer to Getting Started with BlueSoleil .
See Also
Getting Started with BlueSoleil

Figure D - 7
Bluetooth Control Panel & User Guides

Bluetooth Local Area Connection Icon

If you want to display the Local Area Connection icon for the Bluetooth connection in the taskbar, set it up as follows:

1. Access the **Network Connections** control panel in ***Windows*** (**Start > Settings > Network Connections OR Start > Connect To > Show all Connections**) or by clicking the taskbar icon .
2. Right-click the Bluetooth connection icon, and select **Properties**.
3. Click to put a tick in the "***Show icon in the notification area when connected***" box.
4. Close the control panels and the icon for the Bluetooth connection will be displayed in the taskbar when connected (see sidebar and overleaf).



Disconnecting

In order to have the taskbar icon display the correct connection status, you will need to exit the **IVT Corporation BlueSoleil - Main Window** by clicking the **File** menu and selecting **Exit** (see over).

After exiting the program you can then use the **Fn + F12** key combination to turn off the Bluetooth module.

If you use the close button, or turn off the Bluetooth module (by using the **Fn + F12**) the taskbar icon will not display the correct status

Figure D - 8
Local Area Connection

5. Use the **Fn + F12** key combination to turn on the Bluetooth module.
6. Run the **IVT Corporation BlueSoleil** program from the desktop icon or **Start** menu.
7. The connection status will then be displayed.

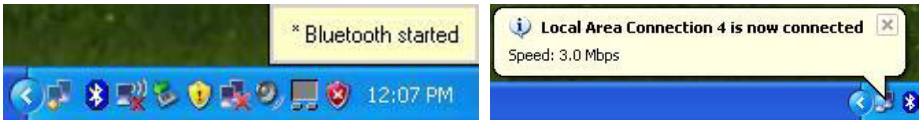


Figure D - 9 **- Bluetooth Connected**

8. To **disconnect** click **File** from the **IVT Corporation BlueSoleil - Main Window**, and select **Exit** (the Local Area Connection will then display "**A network cable is unplugged**").
9. Do not use the **close** button or **Fn + F12** key combination before clicking **File > Exit** or the correct status will not be displayed.
10. You can then use the **Fn + F12** key combination to turn off the Bluetooth module (check the LED icon for the Bluetooth module power status).

Figure D - 10 **- Bluetooth Disconnected**

3.5G Module

If you have included an optional **3.5G module** in your purchase option follow the instructions *on page 7 - 21* to install the USIM card (which will be provided by your service provider), and then install the application.

Before installing the application, make sure that the 3.5G module is on. Use the **Fn +** **key combination** (see *"Function/Hot Key Indicators" on page 1 - 10*) **to toggle power to the 3.5G module**.

3G Watcher Application Installation

1. Make sure the module is powered on, and then insert the ***Device Drivers & Utilities + User's Manual CD-ROM (WinXP)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **4.3G Driver > Yes**.
4. Click **Next**.
5. Choose your region, and click **Next**.
6. Click the button to accept the license agreement, and then click **Next**.
7. Click **Next > Next > Install**.
8. Click **Finish**, and the **3G Watcher** icon will appear on the desktop.
9. You can access the **3G Watcher** application from the **Start** menu (**Start** > **Programs/All Programs** > **Sierra Wireless > 3G Watcher**), or by clicking the desktop icon .
10. Make sure you enable power to the module by pressing the **Fn +** key combination (the icon will be green).
11. See *"Setting Up a Carrier Profile" on page 7 - 25* and *"Connecting to the Service Provider" on page 7 - 27* for instructions on using the **3G Watcher** application.

D

Password Warning

If you set passwords for any of the security modules, **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Security Modules (Fingerprint & TPM)

The encrypted channel between the **Trusted Platform Module security chip** and the **optional fingerprint reader** with **Protector Suite Software** provides a high level of security for your computer. A further level of security and control is provided in the BIOS (see ***"Security Menu" on page 5 - 11***).

The **fingerprint reader** and **Protector Suite Software** allow you to:

- Access or Lock your computer
- Protect sensitive files
- Display and file your favorite web pages
- Fill in frequently used dialogs
- Run your favorite applications

The **TPM security chip** allows you to create and manage digital certificates for user and platform authentication. This type of security is usually administered within large enterprises and organizations, and therefore requires implementation by a system administrator before users can access security features.

Individual users can use the TPM as an authentication with the fingerprint reader.

See overleaf for information installing and configuring the **Protector Suite Software**, and see ***"Trusted Platform Module" on page 7 - 36*** for information on TPM.

Fingerprint Reader Module

If you have included the fingerprint reader in your purchase option you will need to install the driver as per the instructions below.

Make sure you have administrator's rights to your computer, and have a ***Windows*** password enabled for full security protection.

Before beginning the enrollment process it is recommended that you go through the fingerprint tutorial. To run the tutorial click **Start > Programs/All Programs > Protector Suite QL > Fingerprint Tutorial** after installing the driver.

Fingerprint Reader Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (WinXP)*** into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **5.Fingerprint > Yes**.
4. Click **Software Installation**.
5. Click **Next > Next > Next**.
6. Click **Finish > Yes** to restart the computer.
7. See overleaf for information on enrolling fingerprints etc.

Help & Manual

Right-click the taskbar icon to bring up the menu to select **Help**.

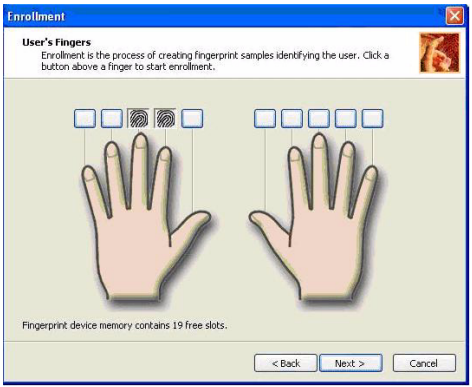
Insert the *Device Drivers & Utilities + User's Manual CD-ROM* and click ***Option Drivers*** (button). Click **Unlock** (button) and then click **5.Fingerprint > Yes**.

Click **Documentation** to open the folder containing the manual in .pdf format.

To install the Adobe Acrobat Reader software to read the file, insert the *Device Drivers & Utilities + User's Manual CD-ROM* and click ***User's Manual*** (button), and click **Install Acrobat Reader** (button).

User Enrollment

1. Click **Start > Programs/All Programs > Protector Suite QL > User Enrollment**, or double click the taskbar icon .
2. On the first run of the program you will be asked to click the button to accept the license, and then click **OK**.
3. Click **Next** and select "***Enrollment to the hard disk***", and click **Finish**.
4. Click **Next** and you will then be prompted to enter your ***Windows*** password (**note**: If you have not set a password **Protector Suite QL** cannot secure access to your computer).
5. Click **Next > Next** (tick the "***Run interactive tutorial***" tickbox to run through the Fingerprint Tutorial).
6. Click **Next** for each window of the tutorial (you can click the button to "***skip tutorial***" at any time).
7. Click the button above any of the fingers to begin the enrollment process for that finger.
8. Swipe the finger three times to enroll that finger.
9. Repeat the process for all the fingers you wish to enroll (see below), and then click **Next**.


Enrollment
User's Fingers
Enrollment is the process of creating fingerprint samples identifying the user. Click a button above a finger to start enrollment.
Fingerprint device memory contains 19 free slots.
< Back
Next >
Cancel

Fingerprint Enrollment

Note that it is strongly recommended that you **enroll more than one finger in case of injury etc.**

Figure D - 11 **- Fingerprint Enrollment**

10. If you put a tick in the **"Enable Advanced Security for the current user"** tickbox you will be asked to input a PIN before continuing (choose TPM key with PIN and enable and create a backup password).
11. Click **Next > Finish**.
12. Right-click the taskbar icon to bring up the menu that allows you to **Edit Fingerprints**, start **Control Center**, access the **Help** menu etc. You can also run the **Control Center** etc. from the **Protector Suite QL** item in the **Programs/All Programs** menu.
13. See *"Help & Manual" on page D - 47* for further details.
14. If you swipe your finger over the reader at any time you can access the **Biomenu** to **lock the computer**, **register websites**, open the **Control Center** and access the **Help** menu.

Figure D - 12 **- Control Center & Biomenu**

D

TPM Security Chip

If you have included the **Trusted Platform Module security chip** module in your purchase **option**, you will have the appropriate software provided on the ***Device Drivers & Utilities + User's Manual CD-ROM (WinXP)***. After installing the driver as per the instructions below, see ***"Trusted Platform Module" on page 7 - 36*** for full instructions on initializing the TPM etc.

TPM Utility Installation

1. Enable the TPM state in the BIOS (see ***"Initializing TPM" on page 7 - 36***).
2. Insert the ***Device Drivers & Utilities + User's Manual CD-ROM (WinXP)*** into the CD/DVD drive.
3. Click **Option Drivers** (button).
4. Click **6.TPM > Yes**.
5. Click **Next**.
6. Click the button to accept the license agreement, and then click **Next**.
7. Click **Next > Next > Install**.
8. Click **Finish** (you may then go straight to the initialization process if you have checked the option).
9. Run the **TPM** application program from the shortcut on the desktop, or from the **TPM Secure Tools** item in the **Start > Programs/All Programs** menu.
10. See overleaf for instructions on initializing the TPM.

Initializing TPM

On the first run of the program you will need to initialize the TPM.

1. Run the application from the Security Manager shortcut on the desktop, or from the TPM Secure Tools item in the Start > Programs/All Programs menu.
2. Click **Next**.
3. Type a **TPM owner password**, and then retype to confirm the password.
4. Click **Next** to create a **recovery token** (see sidebar).
5. Click **Next** and create a **password reset token** file if required.
6. Click **Next** and specify a location for the emergency recovery data path (a root path to restore user keys if you need to reinstall the OS).
7. Click **Next > Next** to begin the Initialization process.
8. Click **Finish** to begin the user initialization.
9. Click **Next**, and type a **TPM user password**, and then retype to confirm the password.
10. Click **Next** and create a **password reset secret** file if required (click in the tickbox).
11. Click **Next > Next** to begin the user Initialization process.
12. Click **Finish** (it is recommended that you use the **Backup and Restore** module to make a backup).
13. Enter the user password and click **Logon**.
14. For further details on using the **Security Manager** see ***"TPM Manager" on page 7 - 41***.

Password Warning

Do not lose the password. If you do so you will be unable to make administrative changes unless you clear the TPM. This could then result in data loss.

Recovery Token

Note the location of the emergency recovery token. It is recommended that you save the file to removable media such as a USB Flash drive (or backup using the tool provided - see page ***7 - 47***).